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# android

» App reviews » Tips & advice  
» Hardware tested » Hacking

## magazine™



### ANDROID WEAR ON iPhone

Get your wearables working with an Apple device

ON TEST

### HUAWEI MATE S

Is this stunner Huawei's best ever smartphone?

Hacker Zone

### BUILD YOUR OWN KERNEL

Take complete control of your device, boost battery life and tune performance

ALSO INSIDE

» Make an Xposed module  
» Get Cyanogen on the ZUK Z1

# GEAR — OF THE — YEAR

THE BEST PHONES, TABLETS AND ACCESSORIES



### ONEPLUS X TESTED

Good performance and great value

### TAKE CONTROL OF KODI

Tips, tricks, hacks and add-ons to get more from your media centre

### GALAXY TAB S2

How does Samsung's latest tablet shape up?



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IMAGINE  
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ISSUE 059



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# GEAR — OF THE — YEAR



Is the Huawei  
Mate S the  
brand's best  
phone yet?  
Find out  
on p68

# Welcome

There may have been fewer Android devices released this year, but manufacturers are definitely concentrating on quality over quantity, a trend that we expect to see continue into 2016. To ensure that you start the year with the best Android kit, check out our Gear of the Year feature, starting on p12. We've selected the best flagship, mid-range, budget and import phones, the year's top tablet, Chromebook and smartwatch, not to mention the finest accessories, apps and games. We even reveal the best manufacturer and retailer, and what makes them so good.

The OnePlus X and the Sony Xperia Z5 Premium head up our reviews section this issue. Sony's offering comes with a mammoth 4K screen, but do you really need that much real estate on a mobile device?

Elsewhere in the magazine we have a complete guide to setting up and using Kodi, plus we explain the benefits of custom kernels and how to find, install and use them in our in-depth feature in the Hacker Zone.

This issue is also packed with a wide range of tutorials, including how to get Skype working on your smartwatch, making your own gestures, getting S Health running on a non-Samsung device, and the new features that are now available in the updated Google Photos.

Enjoy the issue!

*April*

April Madden  
Editor



## MEET THE TEAM

What would you pick as your ultimate gear of the year?



April Madden  
Editor

I've just upgraded my Kodi install to the latest beta of version 16, aka Jarvis, and it's added a host of new features and tweaks to my favourite all-round media player.



Oliver Hill  
Features Editor

Google's latest Chromecast has become a permanent fixture of my TV setup. I've no idea how I lasted so long without one, it's just that good, and you can get one for less than £30!



Adele Jordan  
Production Editor

The Wileyfox Swift can be customised like no other smartphone on the market – certainly the best release from 2015 for people who are picky about their phone, like me!



Adam Markiewicz  
Senior Designer

Motorola phones rule! As a Moto G (2015) and Moto X Style user I can say they are the best mid-range phones I've ever had. My Moto X Style is easily comparable to the best flagship.

## GET IN TOUCH

What do you think?  
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## FREE – exclusive with this issue

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Watch us get our hands on the new BlackBerry Priv smartphone

Expert video guides on getting more from your Android device

Stunning backgrounds for phones, tablets and Chromebooks

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# CONTENTS

**24** Exclusive subscription offer **71** Special offer for international readers

# Launcher



Previews, news  
and speculation  
from the world  
of Android



## 06 Wi-Fi prepares for light speed

## New technology that could revolutionise Wi-Fi speeds



## 08 10 things you need to know about staying healthy with Android

Apps and gadgets for keeping fit and more



## 10 Remi

This Android-enabled alarm makes sure you get a lie-in

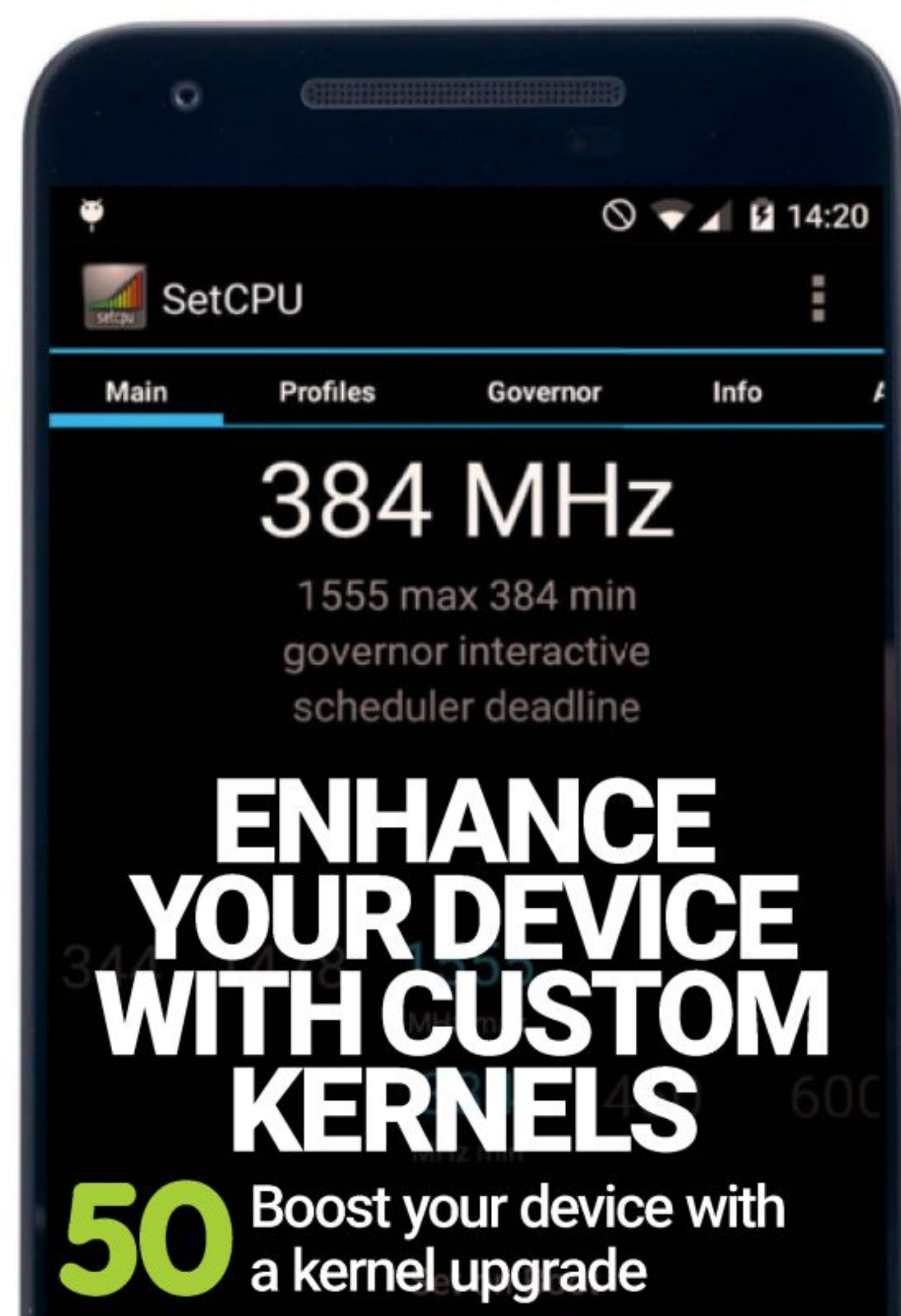


## 12 The top Android tech that you should be using in 2016



# MAKE YOUR OWN ANDROID TV WITH KODI

## 26 Don't wait for Android TV to take off – make your own!



# ENHANCE YOUR DEVICE WITH CUSTOM KERNELS

## 50 Boost your device with a kernel upgrade



# Hacker Zone This month's top mods and tweaks

**50** Enhance your device with custom kernels  
Community developed kernels can enhance device performance

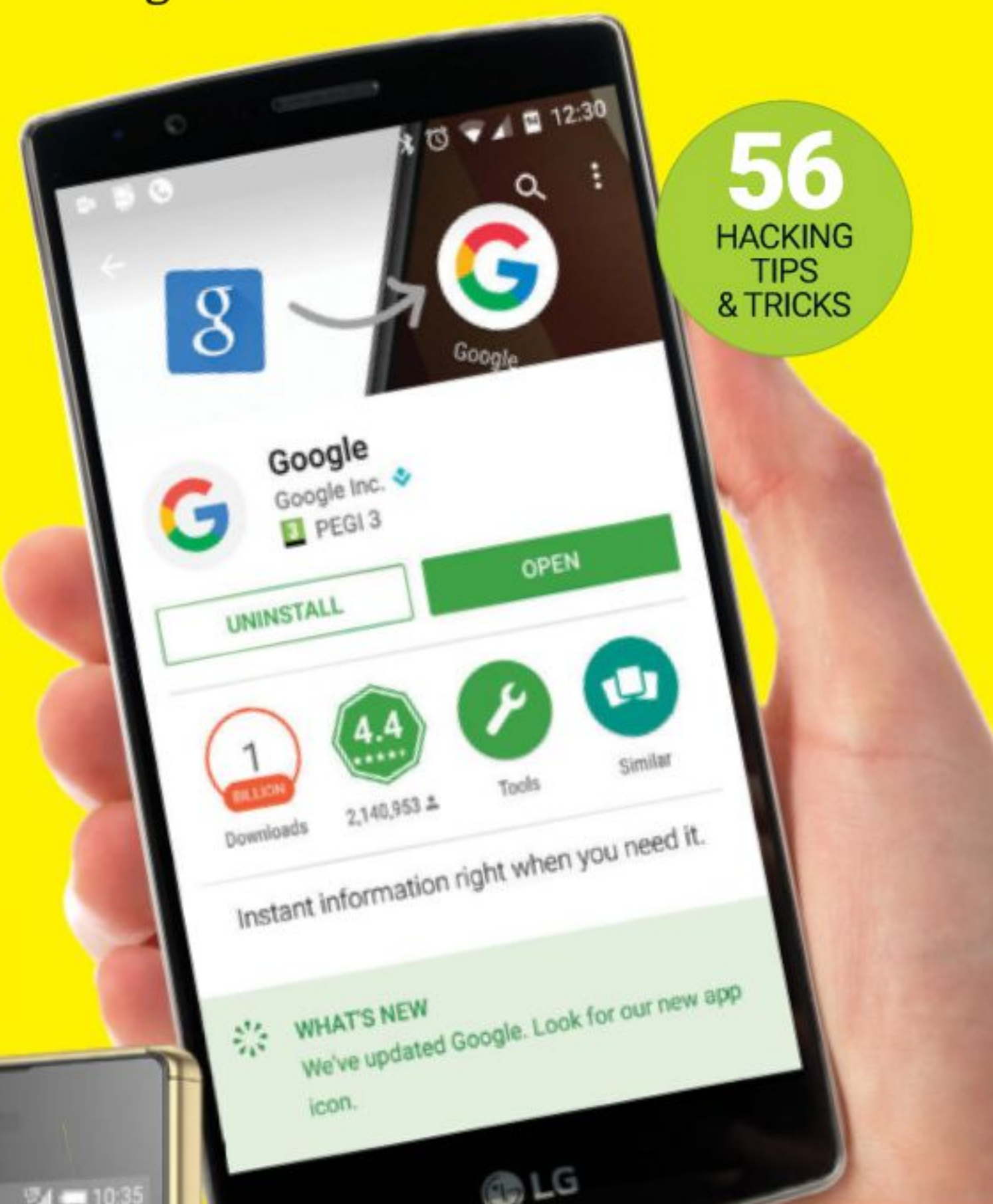
**56** Hacking Tips & Tricks  
Essential hacking advice, including Marshmallow functionality

**58** Create your own Xposed module  
Love the Xposed framework? Use Android to make your own

**60** Make Android Wear work with iOS  
Make your Android Wear device work with an iPhone

**61** Convert a ZUK Z1 to use Cyanogen OS  
Using a ZUK Z1 running the ZUK UI? Convert your device to run Cyanogen OS

**62** Remap buttons with All in one Gestures  
Remap your hardware buttons, corner gestures and more



**56**  
HACKING  
TIPS  
& TRICKS



**68**  
HUAWEI  
MATE S



**66**  
XPERIA Z5  
PREMIUM

## Reviews Latest tech tested

- 64** OnePlus X
- 66** Sony Xperia Z5 Premium
- 68** Huawei Mate S
- 69** Vodafone Smart speed 6
- 70** Amazon Fire tablet
- 72** Samsung Galaxy Tab S2
- 74** Teclast X98 Pro

**76** Accessories  
A phone mount and a speaker

**88** Buyer's Guide  
Our official top 10 lists

## Apps Your complete guide to Google Play

**78** App reviews  
The latest and greatest apps tested in full

**82** Head-to-head  
Apple Music versus Google Play Music

**84** Game reviews  
The best new games reviewed



**84**  
MINECRAFT:  
STORY  
MODE

# 30+ APPS

Visit the **Android Magazine** online shop at **imagineshop.co.uk** for back issues and books

## Tutorials

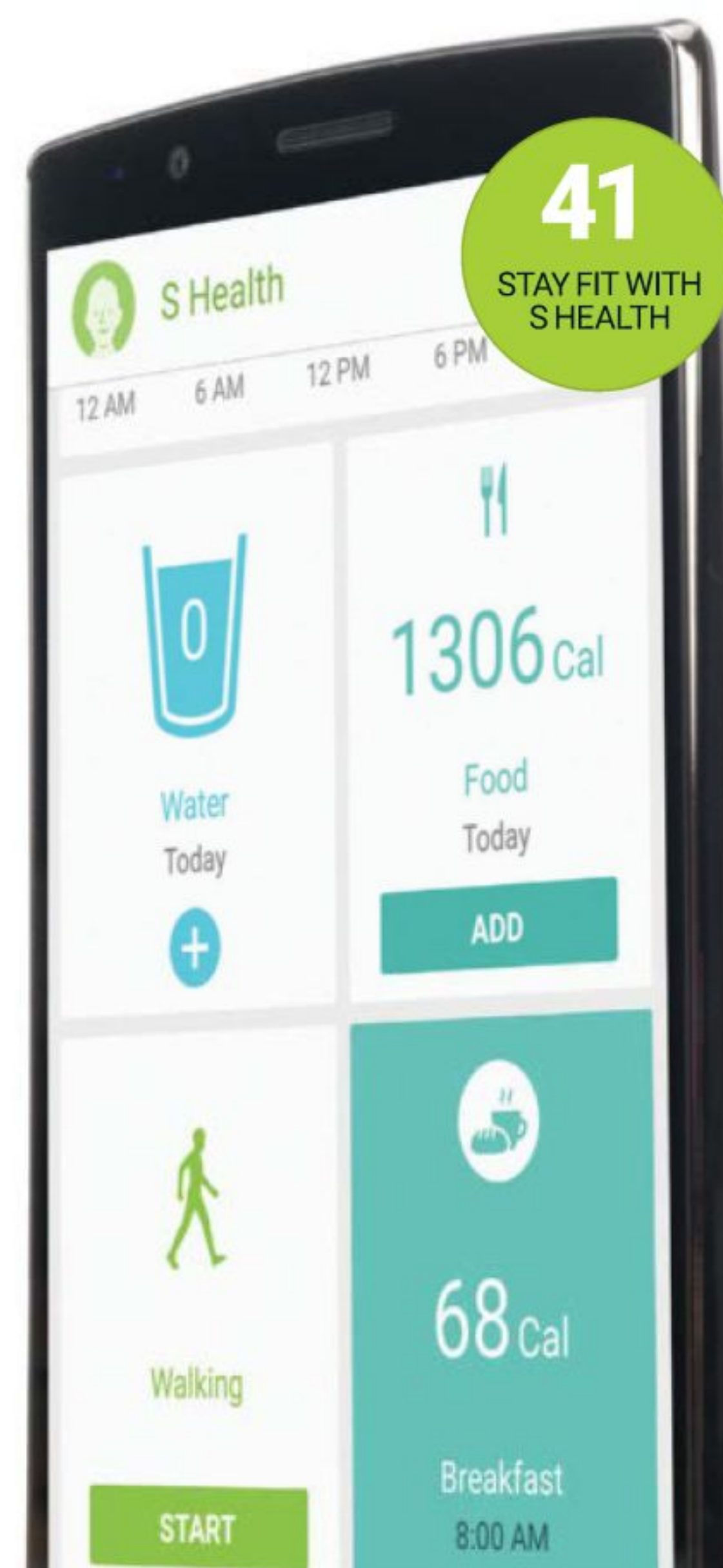
### Get more from your Android device

**26** Masterclass:  
Make your own Android TV with Kodi  
Get more from your media player

### 30 Tutorials

- 30** Create a free website with Weebly in minutes
- 32** Create your own gestures
- 34** Explore Google Photos' brand new features
- 35** Encrypt messages with Secure Chat
- 36** Pick what you want to read
- 38** You can control Skype calls from your wrist
- 40** See your device's vital statistics at a glance
- 41** Stay fit with S Health
- 42** Encrypt any cloud storage files
- 44** Control any computer with your phone
- 46** Use your voice to control your devices

**92** Droid Support  
Readers' questions answered



**41**

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# Wi-Fi prepares for light speed

New technology Li-Fi could revolutionise wireless internet speeds

We've all been there – that moment where your Wi-Fi decides that it's going to drop out of existence for no apparent reason. Pages lag, apps crash, videos buffer and frustration ensues, but now Wi-Fi has seen the light in the shape of emergent tech Li-Fi and it could ultimately be the technology that powers the Internet of Things.

Regular Wi-Fi uses radio waves to connect your devices to the internet. However, in much the same way as an old-fashioned analogue radio will crackle with static or lose its connection due to atmospheric interference, Wi-Fi can sometimes drop out. Bluetooth devices, baby monitors, microwave ovens and everyone else's Wi-Fi can all interfere with yours.

Li-Fi is different. Rather than using radio frequencies, it uses visible light to transmit data. It's not a new or novel idea: in 1880 Alexander Graham Bell designed what he called a photophone (later known as a radiophone) that could transmit audio using light. He considered it his greatest invention – “greater than the telephone,” he said – and the technology itself was the starting point for the fibre-optic networks we're familiar with today, which send pulses of light down optical fibres to transmit data.

Li-Fi takes the same principle – transmitting data via light – but (the clue's in the name) it does it wirelessly. It does this by using light from LEDs. The lights are switched on and off at nanosecond

speeds, which are far too fast for the human eye to see and it's this that carries the data – this is in a similar way to the infrared in your TV remote control. Thanks to the fact that LEDs can be switched on and off millions of times a second, Li-Fi can offer much higher bandwidth than traditional Wi-Fi. A 2015 test by Oxford University recorded data barrelling along at an incredible 224 gigabits per second.

There's a downside though. Despite the lack of interference in the Li-Fi signal, the data can only go where the light can travel; so if there's a wall in the way then it's bye-bye to superfast internet. However, light can be bounced or reflected off a wall and still achieve a pretty





Li-Fi technology could mean that you get a wireless signal from every streetlight

healthy rate of 70 Mbit/s in tests. So how to get consistent Li-Fi connectivity around your home? The solution, of course, is to have Li-Fi enabled LED lighting in every room. It's not as outlandish as it sounds! In a recent TED Talk, Li-Fi pioneer Harold Haas explained, "We have the infrastructure there. We can use them for communications. All we need to do is fit a small microchip to every potential illumination device and this would then combine two basic functionalities: illumination and wireless data transmission." Li-Fi transmitters could simply become as ubiquitous as light bulbs.

While commercial home Li-Fi is still a fair way off, Hass' company, pureLiFi, is working on bringing the technology into the everyday world. Its Li-Flame kit consists of an Ethernet-connected ceiling unit to beam the Li-Fi out and a USB-connected desktop unit to connect devices to it. The product, designed for corporate environments, is a long way off those incredible lab speeds though – it's more of a respectable, yet not game changing, 10Mbit/s. Meanwhile, pureLiFi's partner Oledcomm has a range of devices for sale on its website, but these are kits designed for developing and testing Li-Fi applications, rather than plug-and-play Li-Fi solutions. However, the tech is consistently being demonstrated at industry shows and there is talk, one day, of Li-Fi enabled street lighting.

So what would Li-Fi mean for the Android user? Well, it could leverage fibre-to-door providers like Alphabet Access (aka Google Fiber) to provide high-speed wireless internet at the flick of a light switch. It could bring fast, reliable internet access outdoors as it beams down from

street lamps – for while the light has to be on to carry data, LEDs themselves can be dimmed to such a degree that we're barely aware they're on. But perhaps the biggest implication is for the Internet of Things.

The idea of always-on electronics that constantly interface with each other, the web and ourselves is a long-held dream that may be slowly becoming a reality, but one thing that holds it back is still the relative instability of Wi-Fi. With more Wi-Fi devices clamouring for bandwidth, their signal-to-noise ratio decreases, slowing them down and sometimes even booting devices off the network altogether. This slows the very functions that the Internet of Things is designed for down to a crawl. However, with Li-Fi, the idea of multiple Android-powered devices talking to each other all of the time gets one step closer to reality. ■



LED lights can be switched on and off at nanosecond speeds. This can be used to carry data faster than Wi-Fi



## The best free Wi-Fi revealed

So we're still a little way off from the dream of a completely connected world, but there are ways for you to get better wireless connectivity while you're out of the house, without maxing out your data limits. A recent survey by Wi-Fi provider Devicescape revealed the best sources of available Wi-Fi on the UK high street. Greggs and Marks and Spencer topped the chart for the best quality free Wi-Fi. When

ease of use was taken into account too, Boots and Asda took the crown, whereas the best high-street bank Wi-Fi came courtesy of NatWest. Surprisingly, shops and food-on-the-go retailers, like Greggs, provided a better offering than many of the coffee shops that we traditionally think of as the home of free Wi-Fi. It's worth noting that the report found out of the 40 brands tested, all provided a good standard

of free wireless connectivity. "The real takeaway here is not that Greggs has better Wi-Fi than the next brand, but that the quality of high street Wi-Fi in the UK is really very good across the board," said Mike Hibberd, director of marketing at Devicescape. "At the very least the connectivity offered by the brands we've listed, and many more we have not, is good enough to stream video to a smartphone."





# 10 things you need to know about... staying healthy with Android

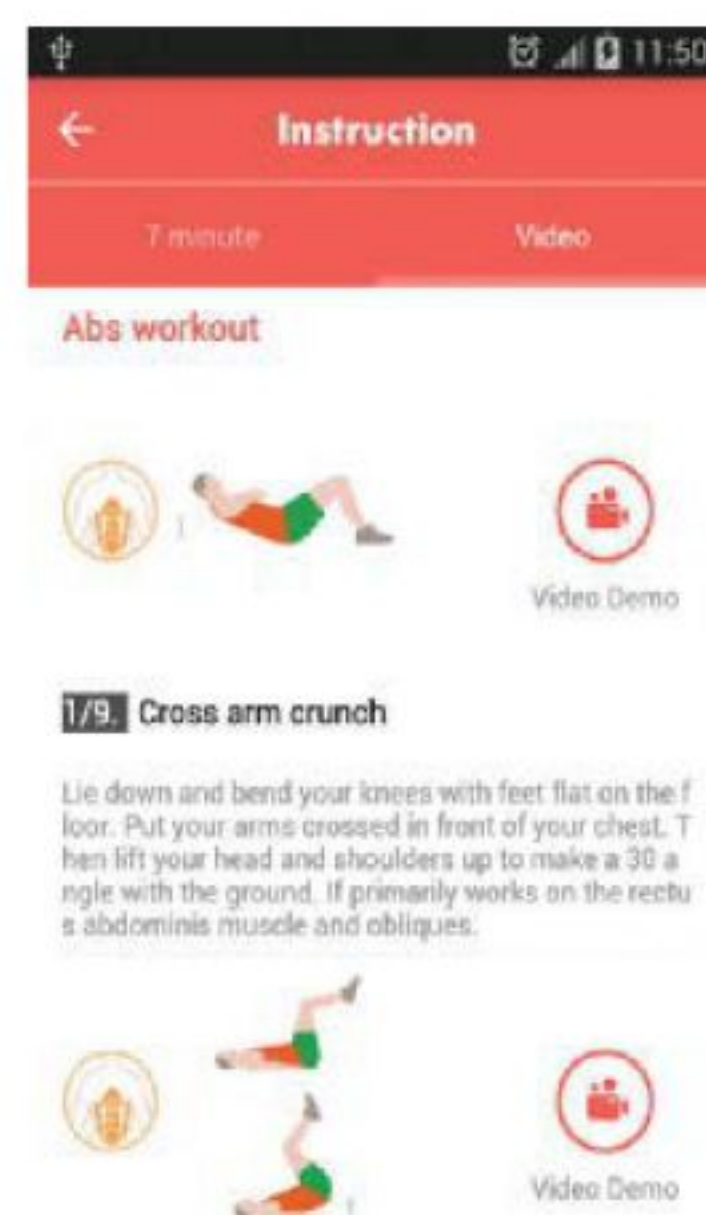
## Keep fit

Smartwatches, fitness trackers and their associated apps can all help you to stay in shape. It's not just about tracking your steps either – the waterproof Withings Activité Pop can track your performance while swimming and the Strava app is a complete cycling-tracker app with basic Android Wear support. For the more traditional fitness tracking fanatic, the Runkeeper app features GPS tracking through compatible smartwatches, Google Music integration and (in the Premium version) the ability to compare your performance against your friends.



## Get a personal trainer

While a lot of fitness apps are designed to track you performing sports you already know how to do, Android apps can also teach you new exercises. Fitivity's Pilates Exercise Workouts app teaches the basics of the popular stretching exercises. Other apps like Abs Workout 7 Minutes, Chest Workout and 30 Day Butt Challenge target specific body areas you want to improve. You can even learn martial arts with apps like Wing Chun Kung Fu: SLT.



## Watch your diet

Whether you're dieting to lose weight or following a food plan to help you achieve sporting greatness, there are a host of Android apps out there to make calorie counting and meal planning less of a chore. The Diet Point Weight Loss app comes with a host of built-in meal plans and shopping lists to help you take the guesswork out of healthy eating, while My Diet Coach – Weight Loss from Inspired Apps brings an element of gamification to healthy eating and hydration.







## Stay hydrated

Getting eight glasses of water down your neck every day can be pretty dull in a world of sugar-laden soda, artisan caramel mocha lattes and, of course, booze. Gamification's the key feature here: Fourdesire's Plant Nanny app is a cute little game in which you manage a Tamagotchi-style plant. When feeding it its daily water, it reminds you to drink your own. For those who take their water consumption more seriously, apps like Aqualert have a more sporty interface.



## Monitor your health

Keeping track of your activity and food intake is all very well, but Android can also help you to monitor your health so you know exactly what you want to achieve with diet and fitness apps. BMI Calculator from Splend Apps lets you calculate your body mass index and work out what your optimum BMI should be. There's also Azumio Inc's Instant Heart Rate app that is highly accurate when it comes to measuring your heartbeat and doesn't require any external hardware to do its job.



## Android says relax

A lot of fitness apps focus on activity, but it's also healthy to take proper downtime, which can be hard in our ever-connected world. Happily, the new generation of relaxation apps aren't all whale song and panpipes. Paced Breathing is

a simple, no-nonsense app that helps you to chill out by getting you to take regular, timed breaths, while Headspace teaches you how to meditate in easy ten-minute slots, and the Buddhify app gets you to select what you're doing or feeling, then serves up a custom meditation program.

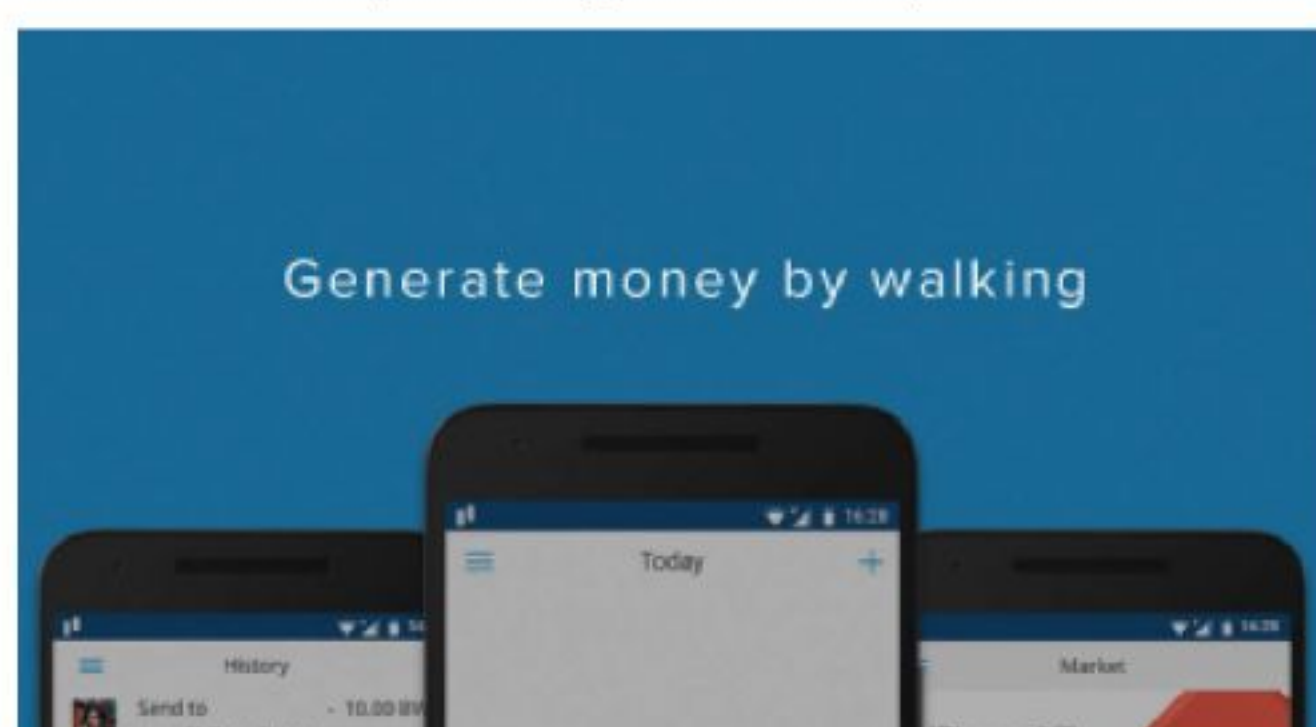
## The eyes have it

Worried that the amount of time you spend staring at your smartphone is having an effect on your eyesight? The Eye Test app from Balint Farago will give your ocular health a quick once-over for visual acuity, colour blindness, contrast sensitivity and more. It's no substitute for going to a proper optician, but it's great for working out whether you need to pay out for a proper eye test or whether you should simply put the phone down for a while!



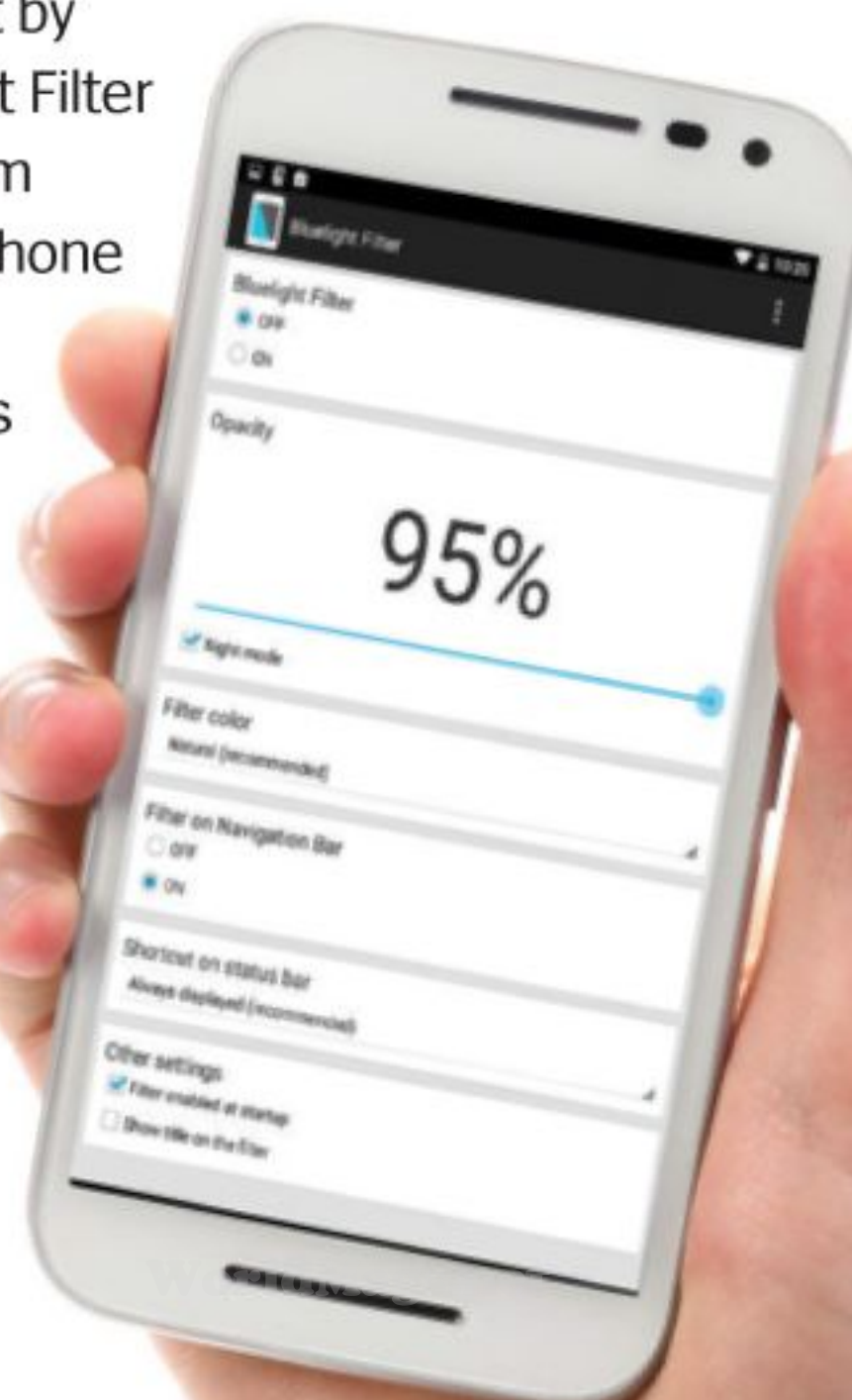
## Get paid to exercise

Achieving the 10,000 steps a day that your fitness tracker demands can be an arduous chore, but now there's a powerful incentive in the shape of Bitwalking. As you walk, the app converts your steps into Bitwalking dollars (BW\$), a cryptocurrency like BitCoin, which you can then spend on goodies from the Bitwalking Market or from third-party partners. It's a new start-up and the app is currently invite only, so head over to [bitwalking.com](http://bitwalking.com) to check you can get it and request an invite.



## Get some sleep

It can feel like your smartwatch or fitness tracker is judging you for every late-night Netflix binge or bout of insomnia. Tracking your sleep patterns can be useful, but there are lots of Android apps to help you drift off. Start by installing BlueLight Filter for Eye Care to dim down the smartphone radiance that scientists claim is damaging our sleep. Do Not Disturb by Cabooze Software shuts off notification noises to also help you get some shuteye.



## Dr Android will see you now

So you've monitored your diet, hydration, health and activity, you've set and completed your goals, taken time to chill and got a good night's sleep – and you've still come down with something. The Kinsa Smart Thermometer provides a highly accurate temperature check and its app even contains a game to keep kids quiet while you take their temperature. Meanwhile, apps like Patient Access in the UK help you to connect with your GP, book appointments and arrange repeat prescriptions.





## NEW TECH | Next-generation night light

# Remi

## The programmable night light and alarm clock that could change your Sunday mornings

Bedtimes and early mornings can be tricky times for new parents so this night light and alarm clock hybrid could help you out.

Remi is a friendly-faced device that also displays the time. It can be controlled entirely from your Android phone via Bluetooth, with parents being able to set a time for their kid to settle down and the earliest time that they're permitted to get up. This information is displayed to the child through lighting and facial expressions. If Remi looks asleep, then they know it's time to be sleeping.

It also acts as a baby monitor and a Bluetooth speaker, enabling parents to keep tabs on their child from another room and play music or lullabies through the device.

Its final party trick is to track your child's sleep based on their noises, so parents can understand when their child has the best quality sleep, how long it takes them to drop off at night and when they generally wake up.

This multipurpose device looks fun, will engage your children and, most importantly, give you that extra half hour in bed at the weekend.

### At a glance

- » **Product name** Remi
- » **Available from** [indiegogo.com](http://indiegogo.com)
- » **Price** \$59

A programmable night light, speaker, sleep tracker and alarm clock to help your child sleep

### Bluetooth

The Bluetooth connection not only means that you can use Remi without eating into your data plan, but also that it can double as a Bluetooth speaker

### Sleep diary

The noise your child makes when sleeping is sent to your mobile so that you can build up a sleep diary

### Lullabies

The first few years of Remi's existence will mostly be playing lullabies and tracking sleep, while the rest should be used for monitoring sleeping times – this can all be altered from your smartphone



### Remi's face

The colours and facial expressions will help kids understand their bedtime routine even if they can't yet tell the time



Kids will learn the meanings of Remi's expressions



You can also program Remi to sing lullabies at bedtime

## Q & A

We spoke to the CEO of UrbanHello, **Hervé Artus**

### How long has the Remi night light been in development for?

**A** We have had the main idea of Remi for several months, but we started the first design developments in April 2015 and [then] went on with the mechanical development.

### How quickly can Remi learn a child's sleeping pattern?

**A** Remi keeps a history of the kid's sleep, which [enables] the parents to very quickly identify what works and what does not work to help the baby to sleep, by using the baby sleep diary where they can note

the parameters as they change. So it is more that Remi helps parents to identify their kid's sleep patterns rather than Remi identifies them itself.

### What is the most impressive thing that the Remi can do?

**A** It can help parents to sleep longer on Sunday mornings! With its very simple signal, thanks to its friendly face, kids are able to know whether they can wake up or have to stay in bed, even if they cannot read [the] time. It is very useful to avoid "Mum, is it time to wake up yet?" at six am on Sunday morning.

### Is it easy enough for a child to use?

**A** Remi is very easy for kids to understand thanks to its friendly design. The application

[for your smartphone] is [also] quite easy to use, but it is not intended to be used by kids alone before they are old enough to be autonomous on their own bedtime routine. Before that, the app [was] designed to be used primarily by parents, who decide what time to wake up and of course, they can show their kids how to use it.

### How have kids reacted to Remi?

**A** Our own kids love it and are already using a rough prototype [in the home], working on the same principle not to wake up too early [on] the weekends. We also tested Remi's look [and] several kids liked it a lot, especially when it is smiling. It seems also that the blue colour is very popular, among boys and girls as well.






## GALLERY OF... RESTAURANT FINDERS

### 1 Zomato – Restaurant Finder

 Zomato is a well-designed app that gives you very basic information about the restaurants near you and highlights the ones that have reviews. You can sort by the kind of meal you want, which is a very handy feature.

» Price: Free

### 2 Yelp

 This app might not be the prettiest, but it is feature-laden, providing its users with a wealth of information including reviews, addresses, phone numbers and customer photos. This is your ultimate one-stop shop for finding an eatery.

» Price: Free

### 3 Near Me Restaurants, Fast Food

 Talk about doing what it says on the tin! This app has preset fast-food outlets saved on its system so if you really fancy a KFC, you can just tap on the icon to find the nearest one to you and it will then display a map.

» Price: Free

### 4 Foodspotting

 While all other restaurant apps focus on the actual place, Foodspotting goes deeper. Users upload pictures of their meals so you can scroll through and see what dish tempts you. You can also follow people and save dishes to a Favourites tab.

» Price: Free

### 5 Bookatable Restaurant Bookings

 Not only can you check out the local area for restaurants and book them via the app, Bookatable also displays various deals and offers that you can use at the restaurants. Ideal for an impromptu meal out.

» Price: Free

### 6 HappyCow Find Vegan Food

 Eating out can be tough if you're vegetarian or vegan. Luckily, HappyCow has a comprehensive list of suitable restaurants, which can be further broken down into different styles, such as American or Thai.

» Price: Free



# GEAR — OF THE — YEAR



## The top Android tech that you should be using in 2016

Okay, so we may well be a little biased here, but what a year it has been for Android. Our smartphones have got smarter, our tablets have got thinner and our smartwatches now actually look like something you'd want to wear. Perhaps the biggest change in the Android ecosystem, however, is that manufacturers are really starting to knuckle down with the idea of focusing on quality over quantity. Compared to both 2014 and 2013, this year has seen fewer devices released, but the overall quality has been better than we've ever seen. Plus we've seen Android integrated into more everyday items; it's now in your home, in your car and even in space!

While we wish we had enough pages to praise each and every amazing new launch that's happened this year, we've had to dig out our thinking caps and select only the absolute best tech out there that you can purchase right now. One of the reasons the following items are being showcased is that they're items that we feel best represent what you should be picking up and using heading into 2016 and beyond. We've targeted different price points, explored the world of wearables and even delved into the next app and game you really need to download.

Don't agree with our winners? No worries, send us a message at Twitter @lgrobot or an email at [qa@littlegreenrobot.co.uk](mailto:qa@littlegreenrobot.co.uk) to let us know what your chosen gear of the year would be.





# The best tech shortlist

Meet the nominees for this year's gear of the year

## Best phone

With such a strong lineup this year, which device will be crowned our Android phone of the year?

1. Samsung Galaxy S6
2. Moto X Style
3. Huawei Nexus 6P
4. Samsung Galaxy S6 edge+
5. HTC One A9

## Best mid-range phone

Achieve a high-end user experience without having to empty your bank account with our mid-range winner.

1. OnePlus 2
2. Sony Xperia M4 Aqua
3. Google Nexus 5X
4. Moto X Play
5. EE Harrier

## Best budget phone

Our nominees for the best budget phone are all amazing and cost less than £150. What more could you want?

1. Moto G (2015)
2. Honor 4X
3. Wileyfox Swift
4. Vodafone Smart ultra 6
5. ZTE Blade S6

## Best import phone

With the rising prevalence of Chinese Android devices, which one is worth you importing right away?

1. UMI Hammer
2. ZUK Z1
3. Honor 7
4. Xiaomi Redmi Note 2
5. Ulefone Paris

## Best manufacturer

Which manufacturer has gone above and beyond to offer an amazing user experience this year?

1. Samsung
2. Xiaomi
3. Sony
4. Huawei
5. Motorola

## Best retailer

You can buy your smartphone from plenty of outlets, but our nominees are the best of the best.

1. Three
2. Carphone Warehouse
3. Clove
4. Vodafone UK
5. giffgaff

## Best tablet

Tablet production may have slowed down, but that hasn't stopped some brilliant additions being added in 2015.

1. Sony Xperia Z4 Tablet
2. Vodafone Tab Prime 6
3. Samsung Galaxy Tab S2
4. NVIDIA SHIELD Tablet
5. Amazon Fire HD 6

## Best Chromebook

These laptop alternatives have really come into a league of their own thanks to the advancements in Chrome OS.

1. Google Chromebook Pixel 2015
2. Dell Chromebook 11 (2015)
3. Acer Chromebook 13
4. HP Chromebook 14
5. Lenovo N20p Chromebook

## Best smartwatch

Hook yourself up with one of the best Android wearables heading into 2016. Which one takes your fancy?

1. Sony SmartWatch 3
2. LG Watch Urbane
3. ASUS ZenWatch
4. Motorola Moto 360 (2015)
5. Pebble Time

## Best accessories

There have been some fantastic accessories this year, so picking a winner was impossible for us to do!

- Best headphones
- Best speaker
- Best media streamer
- Best photography attachment

## Best app

What's the next app you need to be downloading directly on to your Android device?

1. Stagelight
2. DigiCal Calendar
3. Adobe Illustrator Draw
4. ClickMe
5. YouTube Gaming

## Best game

Are indie games still ruling the roost when it comes to mobile gaming on the go?

1. Minecraft: Story Mode
2. A Dark Dragon
3. Geometry Wars 3: Dimensions
4. Leo's Fortune
5. Lifeline 2





**GEAR OF THE YEAR** Best phone

# Moto X Style

The benchmark for all flagship phones to follow throughout 2016

When we first got our hands on the Moto X Style, we soon ran out of superlatives to describe it. It really is that good. It's safe to say that the Moto X Style isn't the flashiest Android device of the year, but it encompasses everything that the modern flagship smartphone should be. It looks great, uses a Snapdragon 808 processor configuration to offer superb usability, includes a pure Android experience and even has a camera that's a photographer's dream thanks to the 21MP rear sensor.

What will be even more pleasing for the more hardcore Android user is that Motorola's close ties with Google mean it'll likely be one of the first devices to get any updates to the Android OS in the foreseeable future.

While it must still be considered a flagship device, it's important to note that it's significantly cheaper than most other flagship launches this year and, trust us, this will make your wallet extremely happy. Plus, if you're a real bargain hunter, with a bit of shopping around you may be able to get the device for less than £300. Considering the high-spec level of the device, partnered with the performance it offers without any issues, it's an absolute steal. Going into 2016, there really isn't another device that we'd want lining our pockets.

## The perfect display

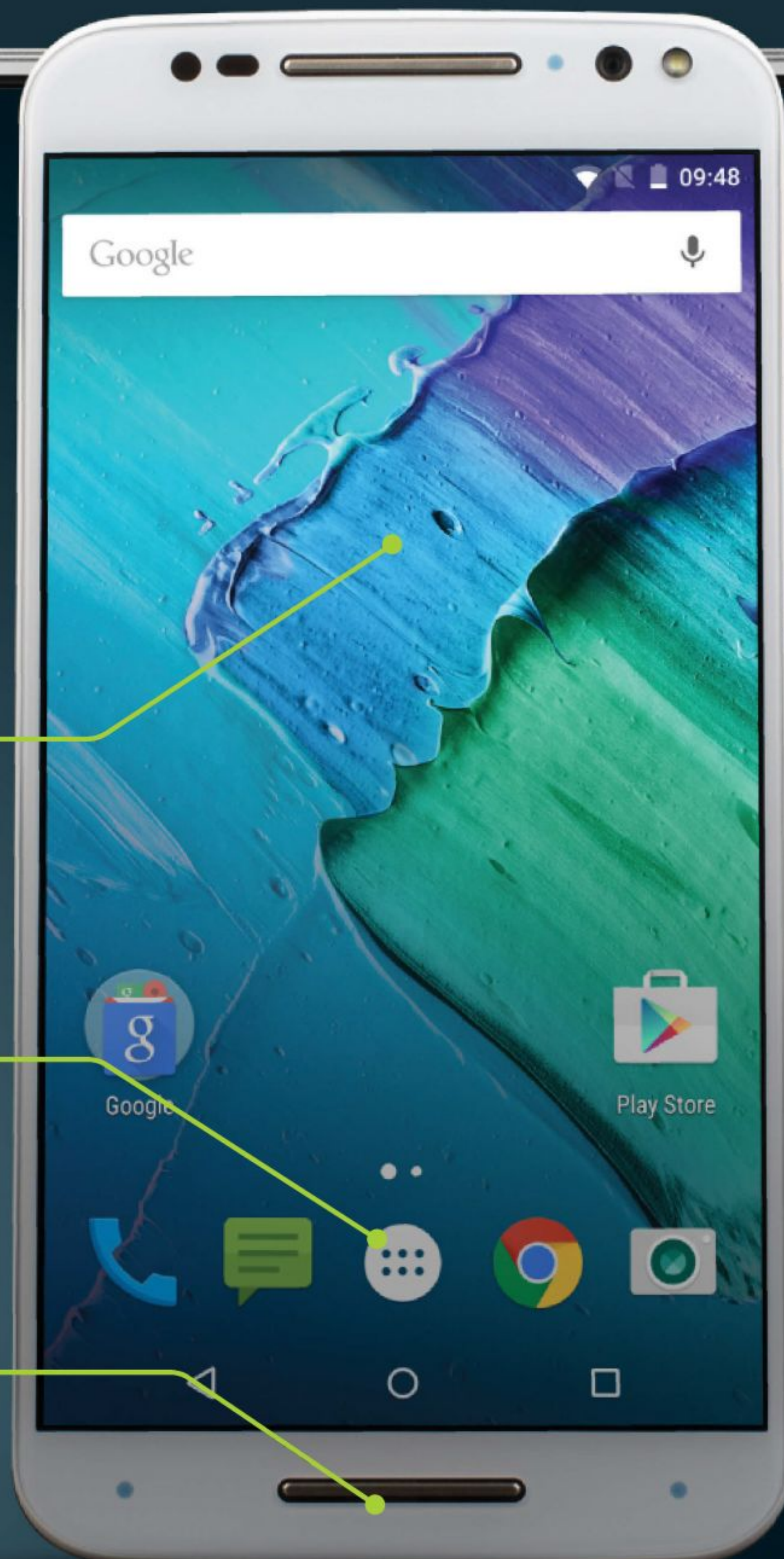
It's a monster of a display at 5.7-inches, but it offers vivid colours, amazing clarity and a great way to watch your favourite movies and play the latest AAA games

## Easy to customise

Users are able to kit out their Moto X Style with a whole range of customisable backplates to help them stand out from the crowd

## Power in abundance

The Snapdragon 808 isn't the latest processor, but it's been carefully configured on the Moto X Style to offer lightning performance



## What we said

**"This comes in noticeably cheaper than its rivals and must surely be considered as a true flagship contender"**

## Why did the Moto X Style win best phone?

1. It fills the large void of a device that sits between being a mid-range and true flagship smartphone.
2. Despite the drop in price, there are no cutbacks to be made in terms of specifications or design.
3. We hate having to wait for our devices to be updated, but with the Style, you won't need to wait for long.

### Runner-up

## Samsung Galaxy S6

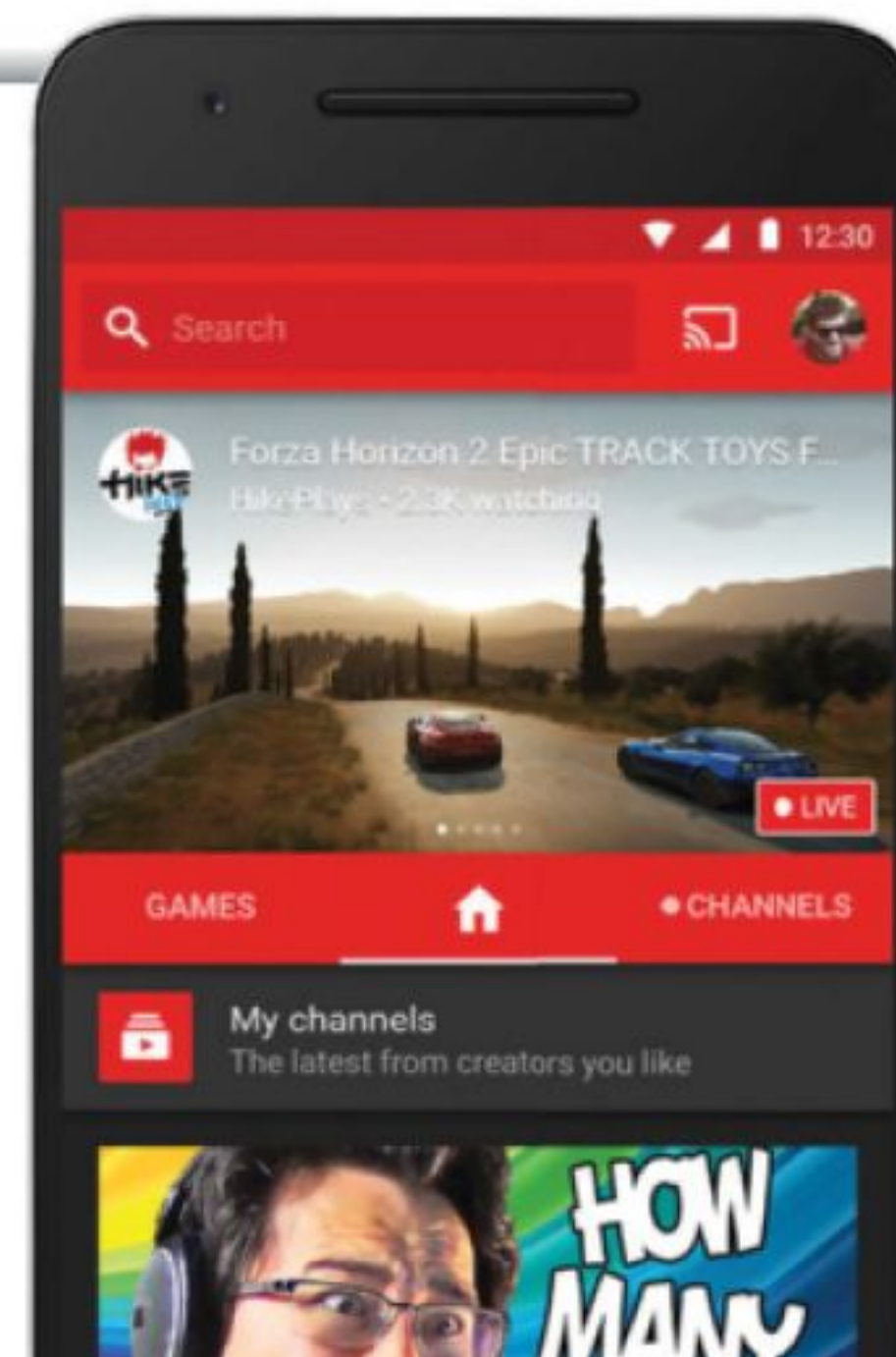
It goes without saying that the S6 has helped Samsung turn a new direction with its devices. While the metal build is pleasing to the eye, it's the advancements of TouchWiz that left us purring in excitement. Small tweaks have made the custom OS an absolute pleasure to use and it can rely on the high-performance Exynos processor to help cope with the most performance-heavy tasks that you can throw at it.



### Runner-up

## Nexus 6P

Huawei's entry to the Nexus line delivered what many were hoping for and more in some cases. Not only was it one of the first devices to get the Android 6.0 treatment, it's also one of the very few devices we would wholeheartedly recommend for snapping pictures in the dark. Coupled with an almighty 3,450mAh battery that will last a day of use without issue – current Nexus users should be tempted by an upgrade here.





## GEAR OF THE YEAR Best mid-range phone

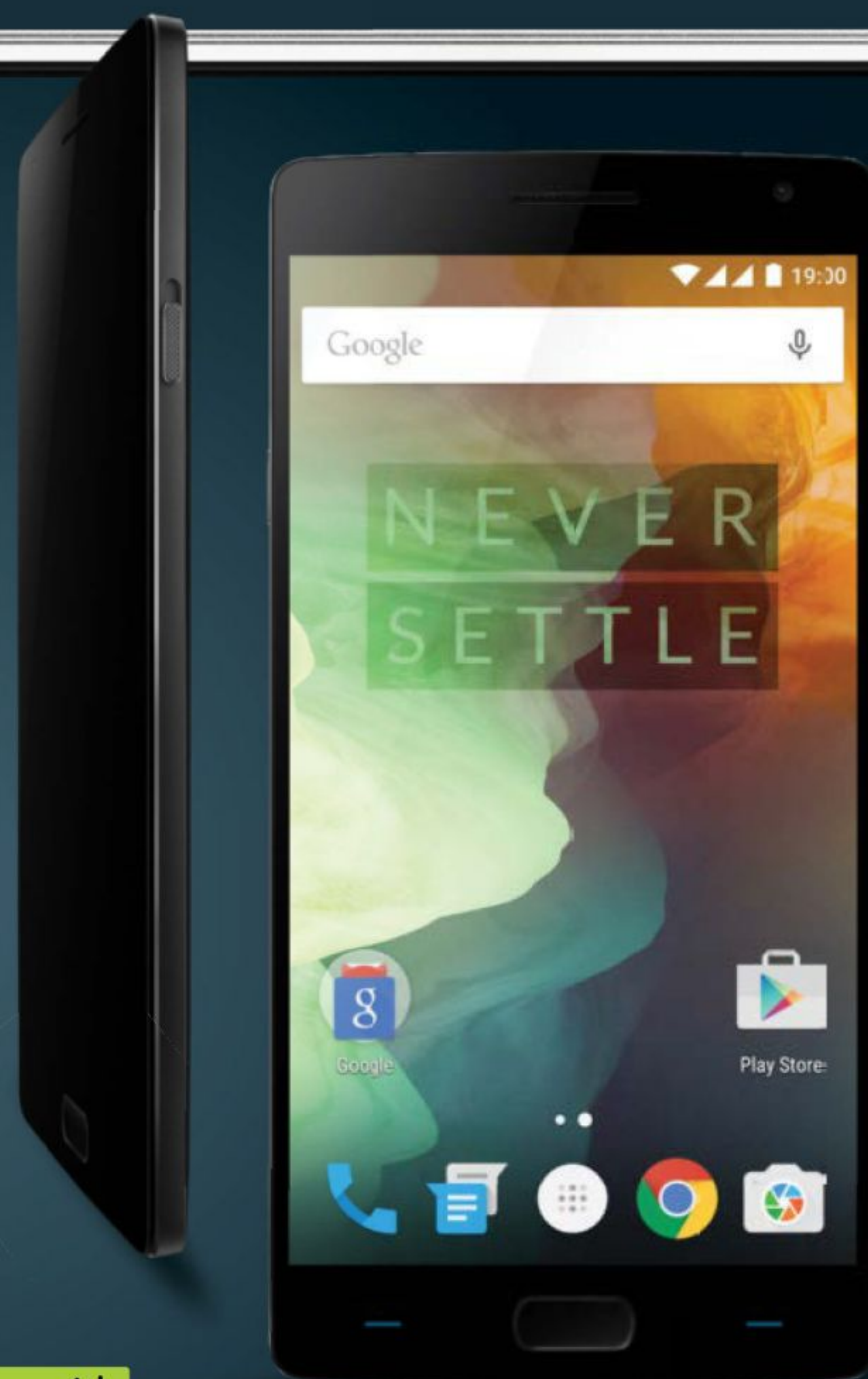
# OnePlus 2

OnePlus has proven you don't need a big budget to get a high-end phone

The term flagship killer has been bandied around a lot this year and while we scoff at it most of the time it's used, it seems apt when handling the OnePlus 2. What OnePlus has proven with this device is that you no longer need million-dollar marketing campaigns to be a success. Instead there's an ever-increasing market for people who really do appreciate very good hardware at a decent price without the razzmatazz of superfluous features at an extra cost.

Not only does it match some of the leading flagships specs-wise, in

certain areas it surpasses them, while experimenting with some pretty impressive features as well to help improve the overall user experience. For example, it has dual-SIM capabilities to work with two networks simultaneously, dramatically increasing your call coverage, and a wide-range band support so that using an international carrier when travelling is also completely viable without incurring hefty roaming fees. We honestly can't wait to see what OnePlus has in store for us in 2016.



### Runners-up

#### Sony Xperia M4 Aqua

It doesn't have the same flawless design as the Xperia Z5, but it does still contain one of the better cameras we've seen all year.

#### Google Nexus 5X

Anyone who has been a faithful user of the Nexus series will feel right at home here, even if it's a little bigger than its predecessor.

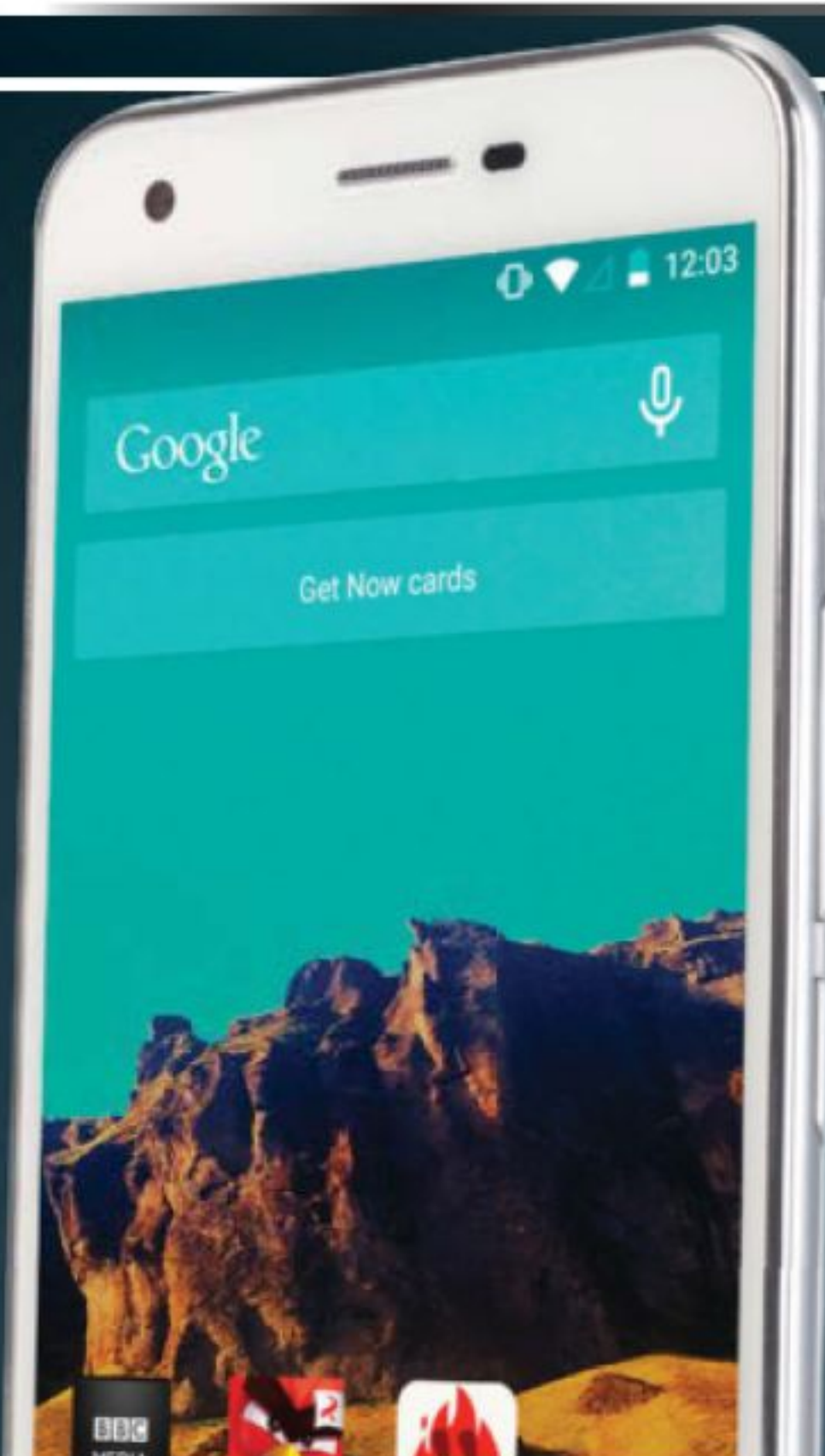
### What we said

"The OnePlus 2 just oozes quality, with every part of it just an absolute joy to get hands on with and use"



### What we said

"It's remarkably quick for a low-cost phone, benefitting from a Snapdragon 615 octa-core processor"



### Runners-up

#### Wileyfox Swift

Despite being Wileyfox's first attempt at an Android device, the Swift looks quite good and it performs well too. We just wish it looked a little better.

#### Moto G (2015)

Another superb entry into the Motorola's already stellar budget line-up, it offers plenty of device for little money. Its only setback is the slightly dodgy camera.

## GEAR OF THE YEAR Best budget phone

# Vodafone Smart ultra 6

While it lacks the pedigree of other devices, the Smart ultra 6 is a stellar budget phone

The market for budget devices has shifted. Users still want a lot of device for their money, while their compromises must be kept to a minimum. No device encapsulates this more than the Smart ultra 6. It doesn't have the metallic body some would like, but for £100 it offers one of the most affordable ways to get a modern Android experience that you'll want to use as your primary device. The reason we recommend it over

many budget alternatives is that it's one of the few budget devices offering a full 1080p display, meaning colours look sharp and you'll want to watch films on it. If that wasn't enough, it also smashes the competition when it comes to battery life; during our tests we found it outlasted the mighty LG G4. If Vodafone keeps up with its trend of producing great wallet-friendly devices, it could soon become a leading hardware manufacturer.



## GEAR OF THE YEAR Best import phone

# ZUK Z1

Will your next smartphone be an import? ZUK is hoping to persuade you to venture east



Don't worry if ZUK isn't a name that rings any bells, as the Z1 is actually its first foray into the world of Android smartphones. But as an entry point into the world of import phones, you won't find anything better going into 2016 than what ZUK has pulled off.

With the help of seasoned manufacturers Lenovo, the Z1 has already been one of the best-selling devices in China. We found that ZUK has taken the time to really listen to what Android users want from their device and it certainly shows here. There's a mammoth 64GB internal storage for those who aren't quite

ready to solely rely on the cloud and security problems can be put behind you with a built-in FPC fingerprint security included for unlocking purposes. The more eagle-eyed customers amongst you will also know that the Z1 runs Cyanogen OS, which has been cleverly optimised to help key aspects of the user experience, including power consumption and privacy. It may be a daunting prospect for many who are looking to get hands-on with their first import, but trust us when we say that the ZUK Z1 is one you really can't afford to miss trying out.

### What we said

"It may not be an established name, but ZUK is another competitor that the big Android players need to worry about"

### Runners-up

#### UMI Hammer

One of the key points that UMI has been banking on to differentiate itself from the crowd is that the Hammer is near indestructible – and in practice these claims are met. It can be dropped from a high distance, sat on and chucked around, all without a performance drop in sight. The reinforced plastic build isn't the prettiest, but it's pretty spot-on for what we find in most modern-day budget smartphones. For £100 it also offers swappable ROMs, full 4G connectivity and a nearly native Android skin. It can be a little slow during the most processor-intensive tasks, but it's only a small blip in the grand scheme of things. It's a phone for those on a strict budget.



#### Xiaomi Redmi Note 2

There's an argument to be made that the 5.5-inch display of the Redmi Note 2 is a little too big for most people, but as you can watch films in full 1920 by 1080 HD, it's certainly worth checking out. To match its big size, the Redmi Note 2 packs in a ton of features so that users are getting true value for money; including a removable 3,060mAh battery that's capable of providing a day of use between charges and a rear 13MP camera capable of producing crystal-clear images in low-light conditions. Another great entry into Xiaomi's already very impressive lineup.

#### Honor 7

One of the problems that many have faced with the Honor 7 is that any stock of it has quickly disappeared, meaning that actually importing it is harder than you may initially think. And why you may ask? Well, this is a flagship device that offers an abundance of high-end features for a paltry £249, which in the grand scheme of things is ludicrously cheap. Design aficionados will fall in love with the full-body metal build, which has a ceramic blasted finish to offer a bit of extra durability to it. During performance tests, the Honor 7 keeps up with some of the leading Android flagships on the market and while it doesn't outshine them, it's still highly competitive.





## GEAR OF THE YEAR Best manufacturer

# Motorola

We've been left with no doubts that Motorola is still the team to beat

While the amount of Android devices that have been released this year has decreased when compared to 2014, what we've seen is a range of new offshoot manufacturers who are looking to establish themselves securely in the Android ecosystem.

While the likes of Xiaomi, Huawei and Wileyfox have all been making people stand up and take notice, we have had to go for one of the more established brands for our manufacturer of the year. It may seem tiresome to say so, but Motorola has had another sterling year across its entire portfolio of devices.

While we previously fell love in with the original Moto E and Moto G devices, their 2015 variants were a big improvement, and we mean big. Motorola remained steadfast in its aim to give new and seasoned users

excellent value for money, and it really does show. It's paved the way for many manufacturers to try and alter the way they market their devices, a surefire way of knowing that you're doing something right.

We've already talked about how much we love the Moto X Style, but let's not forget the impressive Moto X Play either. It was another entry that provided value for money, with a host of features that made the £249 price tag ludicrous for good reasons. And we can't forget the Moto 360, which has seen some small upgrades of late, providing one of the most compelling smartwatch experiences for some time. We love Motorola and while we've covered some great devices here, Motorola's portfolio of Android phones and smartwatches is really second to none.

## Why did Motorola win best manufacturer?

1. Its entire portfolio offers great value for money, especially the budget-friendly Moto E and Moto G devices.
2. Several of its devices can be customised so that every user can make their device stand out from the crowd.
3. The Moto 360 was the benchmark for Android smartwatches and the latest upgrades have been impressive.

## Motorola's best year ever?

What did we score Motorola's latest devices?

Moto X Style



See issue 57

Moto X Play



See issue 56

Moto G (2015)



See issue 55

Moto G 4G



See issue 51

Moto E



See issue 54

Moto X (2014)



See issue 45

## GEAR OF THE YEAR Best retailer

# Clove Technology

The team over at Clove has had another great year

The outlets where you can purchase your smartphones have increased tenfold in the past 12 months, so much so that many leading networks have gone it alone. Three, for example, has split from Carphone Warehouse and conjured up its own storefront where users are able to now purchase from Three directly – a bold move to say the least, but one that could pave the way for other networks to venture into the wilderness alone. While profits will hopefully be improved, are consumers really ready to deal with networks directly when they are due an upgrade for their device?

Despite all the change, Clove Technology has managed to stay ahead of the game at every turn, offering amazing customer service through its website.



Clove usually offers prices cheaper than anyone else and the firm's ordering system is easy to complete for even the most novice of web users. One of the site's leading features is the Compare tool, where you can measure two devices against one another to see which one you'd prefer. It's ideal for those who can't quite decide what device they want to invest in. Plus, let's not forget the people working behind the scenes who are always on hand to help guide you through your offer when you need it. The only problem you could possibly face when ordering from Clove Technology is the amount of choice you'll have available to you. If you're on the hunt for your next smartphone, tablet or mobile accessory, look no further than [clove.co.uk](http://clove.co.uk).





## GEAR OF THE YEAR Best tablet

# Sony Xperia Z4 Tab

The Z4 Tab encapsulates everything we love about Android tablets: it's big, beautiful and works flawlessly

For a long time, the Nexus range was the premier choice of tablet that we would recommend to our readers. While some notable entries have been added since then, it hasn't been until the latter half of this year that we've been able to wholeheartedly get behind other tablets besides the aging Nexus 7, 9 and 10.

The Xperia Z4 Tab is Sony's only foray into the high-end tablet market this year, but it's so good that it'll likely lead the way well into 2016. The lack of real contenders has helped Sony dramatically increase the sales of the X4 Tab and it'll be interesting to see if any other manufacturers take note of its success and plan their next device accordingly. Out of the box, it's immediately obvious why the tablet

has sold in such large numbers: it looks phenomenal. Not only does it feel good in hand, it benefits from being remarkably thin, so much so that you'll struggle to find any other tablet currently on the market that can rival it. It's also got one of the sharpest displays in the business and while Sony has included a 4K screen in its Z5 Premium phone, the 2K screen here shows off the power of Sony's impressive TV technology.

While some may brush it off as an expendable feature, having a fully waterproof tablet is impressive for a tablet, especially one that's of this size. It means if you're daring enough to take a tablet with you for a swim, the Z4 Tablet can be with you every stroke of the way.

### Why did it win?

1. It's not only one of the slimmest tablets we've ever had the pleasure of using, it's remarkably light too.
2. Sony has always created fantastic custom software for their devices and it's packed full of features.
3. In overall performance, the Z4 Tablet just outshines everything else that's been launched this year.

### What we said

"It's the first 10-inch screened tablet that is comfortable to hold for extended periods"

### Runner-up

## Vodafone Tab Prime 6

Vodafone claims another second spot in our gear of the year with the budget-friendly Prime 6 tablet. We'll go ahead and say it isn't really a looker and you won't find anything other than plastic encasing this device. However, that's the only real negative we found during our time with the tablet, as we found it a pleasure to use. It's light, comfortable to hold and the display is crisp.





GEAR  
OF THE  
YEAR

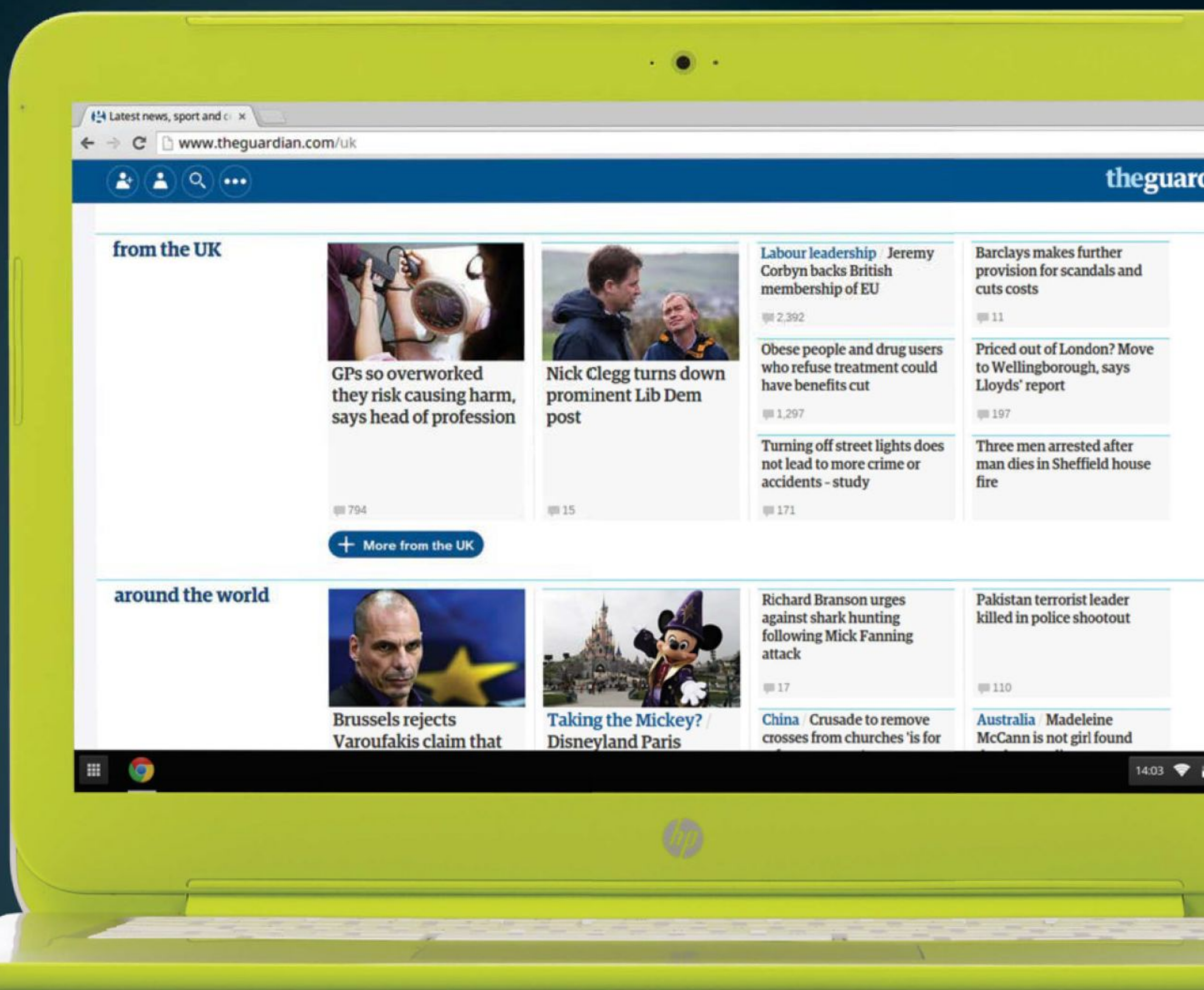
## Best Chromebook

# HP Chromebook 14

Taking Chrome OS on your travels has never been better

The market for Chromebooks is slowly but surely gathering pace, and 2016 is set to be the relatively new device's best year yet. These laptop alternatives are renowned for being lightweight, cloud-connected and a great entry-level product to own for novice Android and Chrome users. One of the reasons we chose the HP Chromebook 14 as our winner is that it offers a great bridge between both laptop and Chromebook in one package. The full-sized QWERTY keyboard is the best we've tested for some time and the accompanying trackpad is highly responsive to a wide array of gestures. We should also highlight the battery life, as ten hours is particularly impressive for a 14-inch device such as this. This will mean all those long sessions of photo and video editing are completely possible here – if you can find a decent Chrome app to use, that is.

In a market that's really starting to grow, HP has managed to create a great entry-level Chromebook that everyone can enjoy.



### What we said

"The Tegra processor and 2GB of RAM means all of your tasks are easily achievable"

### Why did it win?

1. It's the closest Chromebooks have come to resembling a laptop, for those who can't quite make the adjustment.
2. We tend to find that battery life is a real letdown with Chromebooks, but the HP 14 bucks the trend well.
3. Craving a decent typing experience isn't unusual, but the QWERTY configuration here is absolutely outstanding.

### Runner-up

## Chromebook Pixel 2015

On paper, the Chromebook Pixel 2015 wipes the floor with nearly all Chromebooks on the market and a good number of laptops to boot. The reason we couldn't make it our winner here is that it doesn't do quite enough to warrant the £799 required for the basic model. However, it does do a lot of things very, very well. It's astonishingly fast, using either the

Intel Core i5 or i7 (depending on your chosen specification) to make any and all tasks you throw at it easy to complete. Those who crave an awe-inspiring display will also be in luck here due to the 12-inch 2560 by 1700 resolution that makes both films and games a pleasure to immerse yourself in. We can only hope that Google makes the next entry into the Pixel lineup a bit cheaper, to open it up to millions of other potential users that are eagerly waiting.





## GEAR OF THE YEAR Best smartwatch

# LG Watch Urbane

A smartwatch that you will actually want to wear in public

There was a time in the not-so-distant past where smartwatches were a completely niche product. While many of them were available, users were slow to adapt to having an accompaniment to their Android device on their wrist, and initial sales stalled. Fast-forward to the here and now, and the smartwatch landscape has changed quite dramatically. Sales have rocketed in the past 12 months and heading into 2016, smartwatches are proving that they could be a multimillion-pound business.

Best of the bunch is the LG Watch Urbane, which is weirdly one of the few smartwatches that actually resembles an actual watch. It combines the traditional look of a watch with an array of sensors in its outer rim to provide a stylish and

smart extension to your Android device. We should also mention that it's highly customisable, with a plethora of alternate straps readily available, depending on the kind of look you're wanting to achieve.

Some devices have struggled with keeping Android Wear running at its peak performance at all times, but that doesn't seem to be the case with the Urbane. A combination of a nifty Snapdragon 400 processor clocked at 1.2GHz, partnered with 512MB RAM, keeps everything running smoothly and doesn't dramatically impact the 410mAh battery that's located nearby. Despite some strong competition from both Motorola and Samsung, the LG Watch Urbane is without doubt the smartwatch you should be using through 2016.

### Always-on display

The always-on display is used to mimic what you would normally find on a traditional watch face; the only difference is that the face of the LG Urbane can also be customised



### IP67 certified

Going for a shower? Then there's no need for you to remove your Urbane. It's both water and dust resistant, so it will be able to take the rough and tumble of any adverse weather conditions

### What we said

"It doesn't look overly big on the wrist, which means you'll want to wear it! Definitely one for the fashionistas out there"

### Why it won?

1. It's one of the few smartwatches that actually resembles your traditional wristwatch, as weird as that sounds.
2. The combination of Android Wear and a Snapdragon processor keeps everything running smoothly.
3. Customisation options are plentiful, with users able to opt for any third-party strap of their choosing.

### Runners-up

#### Sony SmartWatch 3



Sony's latest entry into the smartwatch market was one of the first to arrive in 2015, but it's still a product we recommend to use in 2016. It's highly efficient when

partnered up with any Android device, but it excels when used in conjunction with any Xperia smartphone. Eagle-eyed users will be able to pick one up for less than £100 at the time of writing.

#### Motorola Moto 360 2015

For a long time, the Moto 360 was the smartwatch to beat, offering a gorgeous design and high usability without charging a fortune to do so. One of the key reasons we love the 2nd gen version of the Moto 360 is that it offers a 46mm casing option. While it looks larger on the wrist, it does make getting around Android Wear a more viable task to complete.



#### Asus ZenWatch

If you're on a budget, then your best choice has to be the Asus ZenWatch. It's certainly a looker and has the added benefit of a slightly curved case that makes wearing it a little more comfortable over prolonged periods of time. It doesn't offer the smoothest user experience compared to the Urbane or Moto 360 2015, but it's not bad by any means, and the addition 4GB internal storage is a good extra.





## GEAR OF THE YEAR Best accessories

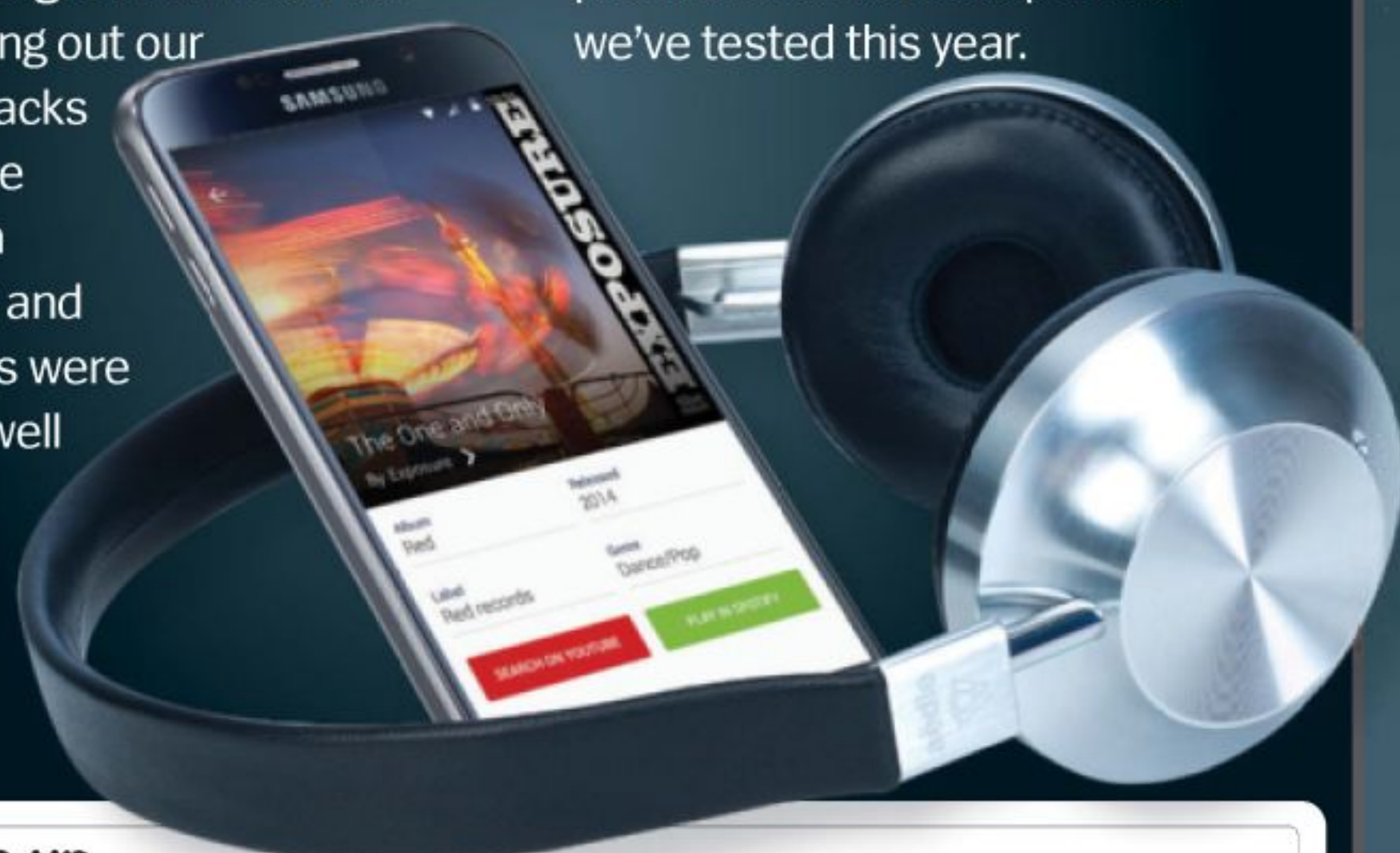
### Headphones

## Aedle VK1

Enjoying your favourite music on the go has never looked so good

While we weren't too keen on the plastic cable used on the VK1 headphones, we couldn't help but fall in love with the full-body metallic design. Then when we started trying out our favourite tracks on them, we were blown away. Bass and treble levels were dealt with well and the

accompanying drivers are able to highlight the highs and lows within each song. Sure they're quite expensive, but they're one of the premium sets of headphones we've tested this year.



#### Runners-up

STK Intense | Sony MDR-1RBT | KEF M400 | Sennheiser MM 400-X

### Media streamer

## Chromecast (2015)

Google's streaming device just got better than ever

Without a shadow of doubt, the latest iteration of the Chromecast deserves to be named as our best media streamer of the year. While it largely performs the same task as the original, it's a little quicker, more stable and the accompanying app has been revamped to add real purpose. The Google Play store also has far more compatible Chromecast apps

available, so getting your films, games and music from your phone to your TV has never been easier.



#### Runners-up

Roku 3 | Amazon Fire TV Stick | NVIDIA SHIELD Samba  
| Matricom Android G-Box

### Speaker

## Ruark Audio R4 MK3

Achieve pitch-perfect sound with the R4 MK3

Choosing a winner for this category was tough, really tough. In the end we chose the R4 MK3, partially due to it feeling like a more complete product. Its audio output is both powerful and full of bass simultaneously,

while still being able to pick out the subtle noises included in most acoustic tracks. Plus, if you've yet to make the move over to digital music, then there's an accompanying CD drive on hand whenever you need it.



#### Runners-up

Orbitsound A70 | Fugoo | JBL Charge 2 Plus | Bose SoundLink Color

### Photography

## Manfrotto PIXI Smart

Snap pictures with this handy tripod from Manfrotto

With our smartphone cameras getting better, the need for accompanying accessories to improve them are getting less warranted. However, a good tripod is always needed and this is the best one we've seen in some time. It's easily adjustable and works with the vast majority of Android smartphones as the bracket can be expanded to grasp onto even the biggest of Android devices. We should mention that its small stature makes it easy to carry around for whenever a bit of inspiration hits you.



#### Runners-up


Muku Shuttr | Smartphone Ring Light | GorillaPod Hybrid



**GEAR OF THE YEAR** Best app

# YouTube Gaming

Move over Twitch, because there's now a new sheriff in town

 The market for watching people play videogames may seem strange to some, but it's already set

to be massive news in 2016. While Twitch has by and large been the best way to watch people play the latest and greatest titles, Google has got in on the action with the launch of YouTube Gaming. The reason that we chose this as our app of the year is that it doesn't just cater for all the gamers out there, but it also broadens the appeal of the existing stellar YouTube app by adding a new dimension to the level of interactivity it already offers.

As well as being able to watch live streams of people all over the world playing new and old games alike, there's a whole virtual vault of videos that users can tune into and watch

whenever they are on or offline. By our estimate, there are hundreds of terabytes of archived footage ready for you to get stuck into – it's a gamer's dream scenario for sure.

Plus, for those who like to stay in sync, there's plenty of cross action between both the standard YouTube app and this one, with many familiar features appearing in both. Trust us when we say it's got all the charm of the traditional YouTube app, just with a more tailored output towards gamers.

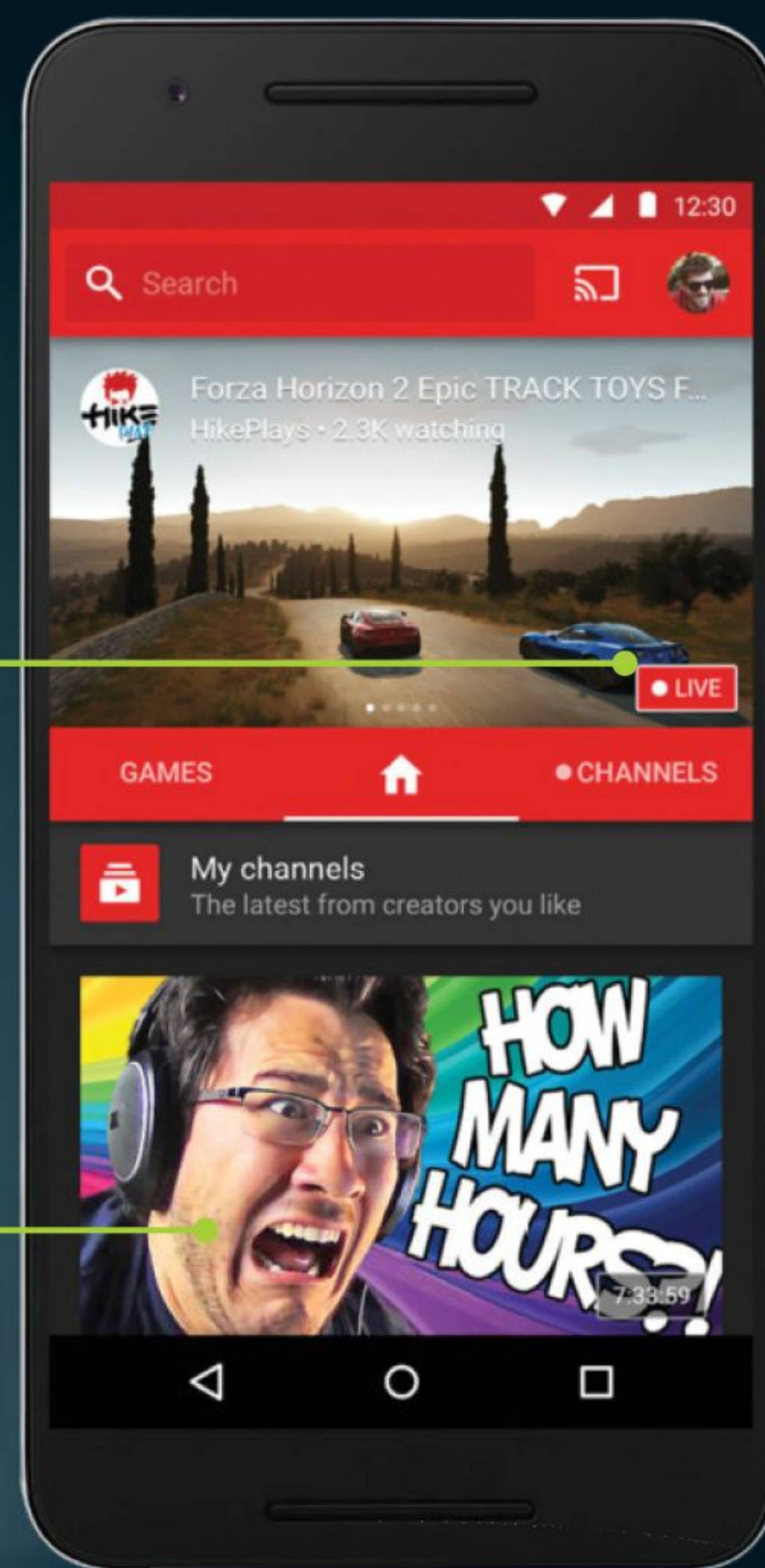
There have been some great additions to the Google Play store, but we absolutely love YouTube Gaming and can't wait to see how it develops. With updates in the pipeline and a trickle of people moving across from Twitch to YouTube Gaming – including some big name streamers – it's exciting times for Google.

## Stay connected

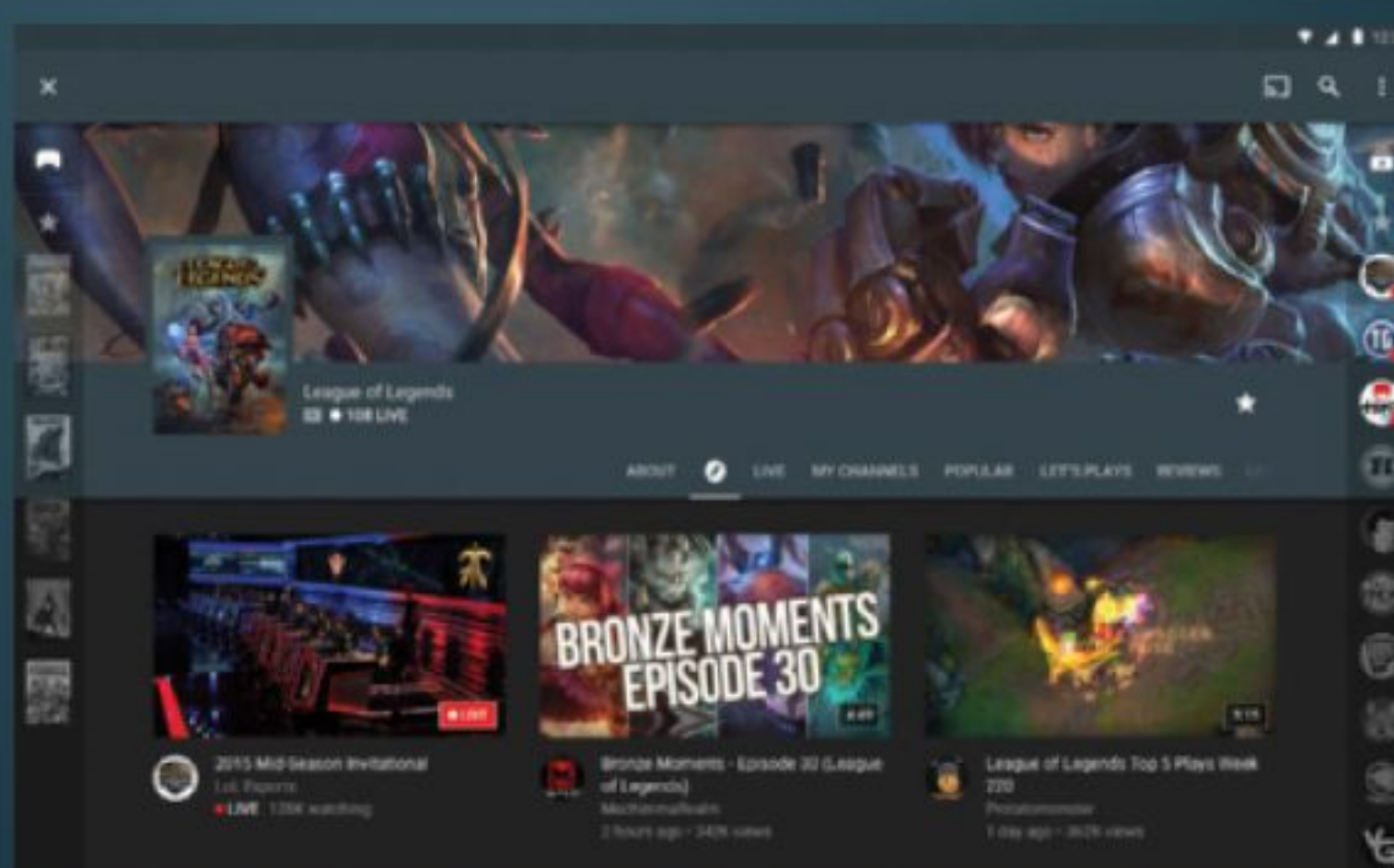
If you've subscribed to a certain channel on YouTube, then you'll be notified once they go live on the YouTube Gaming app via your Gmail account

## We're live!

As well as watching your favourite streamers, you can use the app interface to set up your very own stream and show off your skilled gameplay



Interact with your favourite channels as you watch



Subscribe to a channel to see when they go live

## What we said

"There are plenty of similarities to Twitch, but that isn't necessarily a bad thing. This app is a real contender."

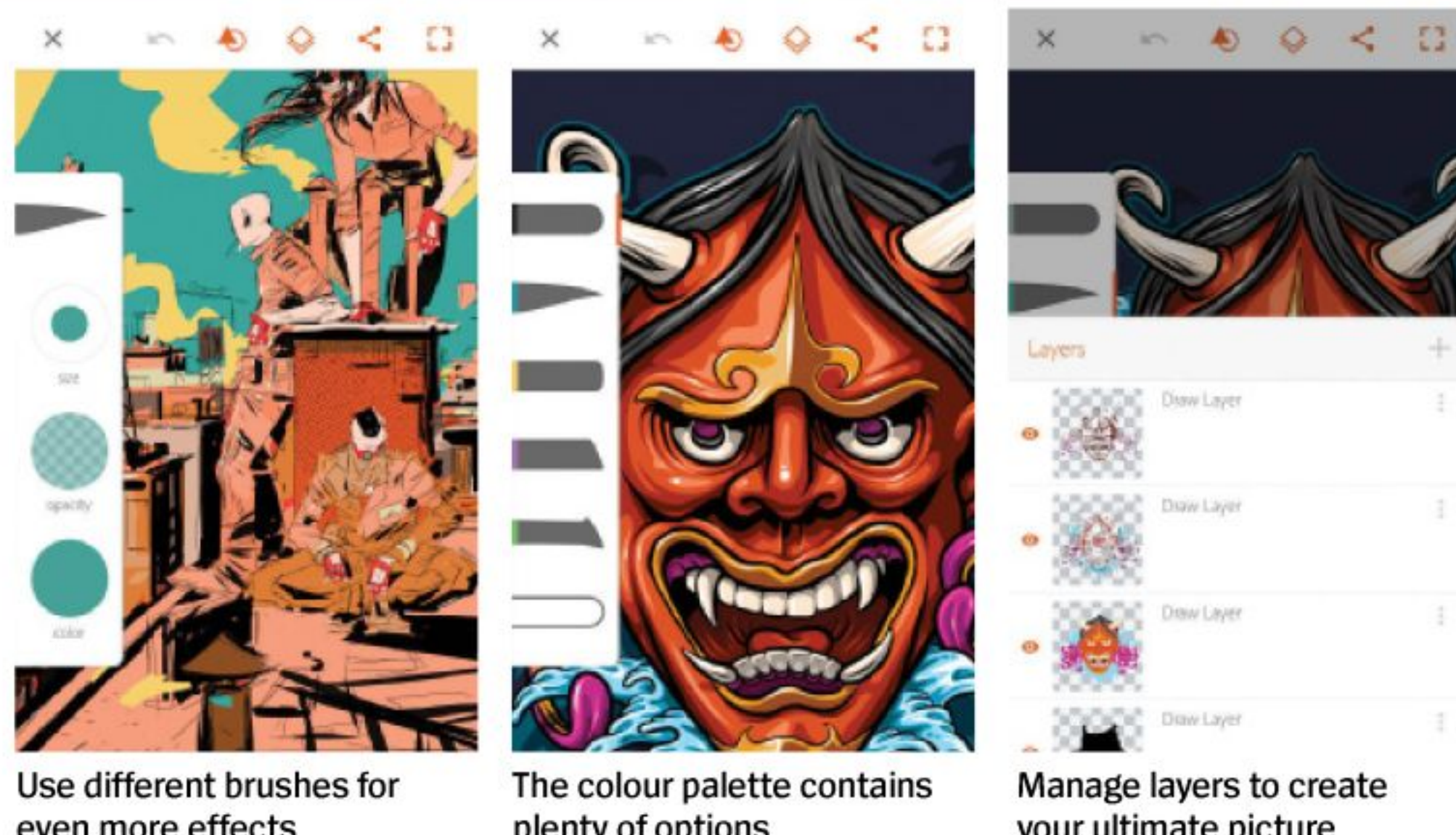
## Runner-up

### Adobe Illustrator Draw



The ability to draw professional-level designs on your Android device has been fairly stifled with the lack of real creative apps until now. Design powerhouse Adobe has created a one-stop app for all budding designers to really get to grips with. The app itself is easy to navigate and has enough tools to cater for the most ambitious of

designs and long-term projects. However, it's also not too difficult for novices to get involved with and just bash out the odd doodle or two. We also applaud the level of sharing options that's at your disposal and further editing can be made by sending images across to your desktop computer or Chromebook. If you've got the itch to draw, this is the app you need.



Use different brushes for even more effects

The colour palette contains plenty of options

Manage layers to create your ultimate picture





## GEAR OF THE YEAR Best game

# Geometry Wars 3

*GW 3: Dimensions* leads the way for a stacked year of Android gaming



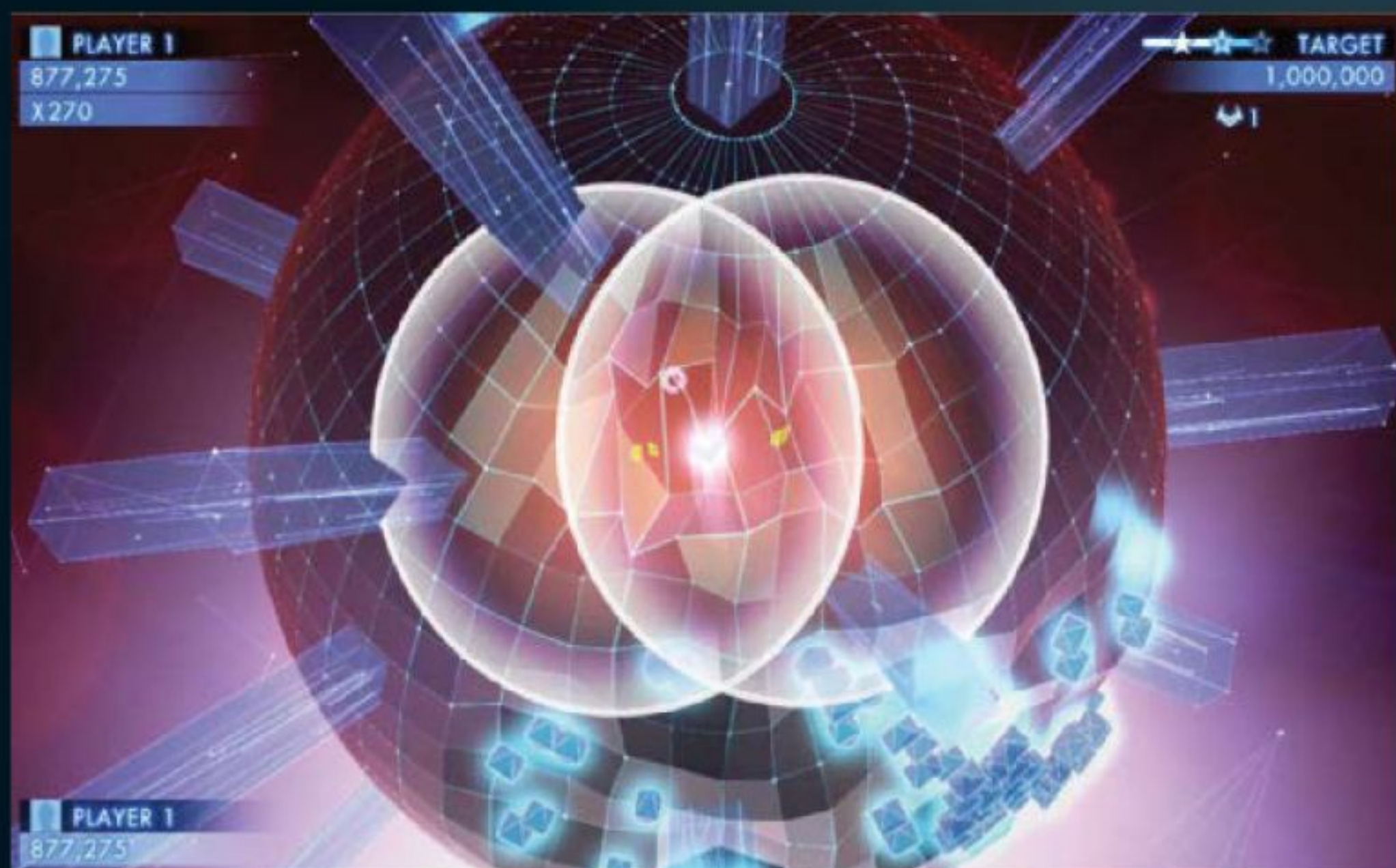
**What a year it's been for gaming on Android; we've seen a high number of AAA ports**

make their mobile debut, while indie games have also made a big splash onto our screens. There's even been the launch of actual Android gaming tablets, but it's still a fairly niche market currently. Choosing a winner was tough, but when we really thought

about what makes a mobile game great, we couldn't look past the stunning *Geometry Wars 3*.

Combining the artistic style of a retro shooter from yesteryear and the pick-up-and-play style that has made the likes of *Angry Birds* and *Temple Run* such runaway hits, *GW 3: Dimensions* is certainly the complete package. Users navigate their tiny ship away from oncoming enemies,

collecting power ups and aids to help eradicate anything in their way. As you get further into the game, enemies become more common and pixelated explosions will fill your screen with gorgeous colours. Various difficulty settings and over 100 levels means there's plenty of replay value for those who want a little more from any game they download from the Google Play store. Pixel perfection!



### What we said

"It's hard as nails to master, but you'll definitely want to try this game out. One of the best retro shooters we've ever seen"

Explosions look so, so good on any and all Android devices

### Runners-up

#### Minecraft: Story Mode



The building block frenzy is back with *Minecraft: Story Mode*.

While it may lack the open-world style, it does include all the usual charm found in the original game.



#### Leo's Fortune



With graphics that rival most current-gen consoles, *Leo's*

*Fortune* is one of the most gorgeous games that we have ever had the chance to play at Android Magazine HQ.





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» masterclass

## Make your own Android TV with Kodi

Don't wait for Android TV to take off — put your own system together today!

**Google's attempt to take over our living rooms is making progress, but it's slow going.** Android TV gets more exciting and more impressive with each new generation, but it is still going to be some time before our TVs and set-top boxes are routinely powered by the platform.

Fortunately you don't have to wait for Google to overhaul an entire industry before you can benefit from an Android-powered TV system. With Kodi, a free app from the Play store, you can build your own right now.

Kodi began life as XBMC, an app designed to enable movie streaming on the original Xbox games console. As an open-source product, it was quickly embraced by developers who began porting it to other devices. Today it is rebranded as Kodi and is available for pretty much every platform.

This means you can turn your Android device into a set-top box for your TV. It can stream television shows and films from sources like Netflix and BBC iPlayer, as well as global TV channels and web services.

### DIY Android TV devices

Fancy doing it yourself? Here are a few gadgets to get you up and running

#### Amazon Fire TV Stick

The Amazon Fire TV Stick is a tiny, Chromecast-style dongle that plugs into the back of your TV. Unlike Chromecast it runs Android, so it's possible to install Kodi directly onto it.



#### Android TV box

For the price of a Fire Stick you can pick up a set-top box that runs full Android, sometimes with Google Play and sometimes without. They should be plugged into a TV or monitor.



#### Android tablet with MHL

Alternatively if your Android tablet — or even your phone — supports MHL you can plug it straight into your TV via a HDMI cable. Not all devices support this so you will need to check the specs.



### Get the most out of Kodi

#### 1. Install add-ons

You can add content channels to Kodi by installing add-ons. These are separate apps that search specific locations for films and TV shows. There are also add-ons for photo and music services, such as internet radio.

#### 2. Stream in full HD

Kodi is able to stream in full 1080p HD so long as your internet connection is fast enough. We'd recommend a broadband speed of at least 5Mbps to stream in the highest quality.

#### 3. Chromecast or Kodicast

Unfortunately, there's no built-in support for streaming to a Chromecast. Although it is technically possible with an app called Kodicast, it is complicated and far from user-friendly to configure. Kodi works best with a dedicated device attached to your TV.

#### 4. Dedicated devices

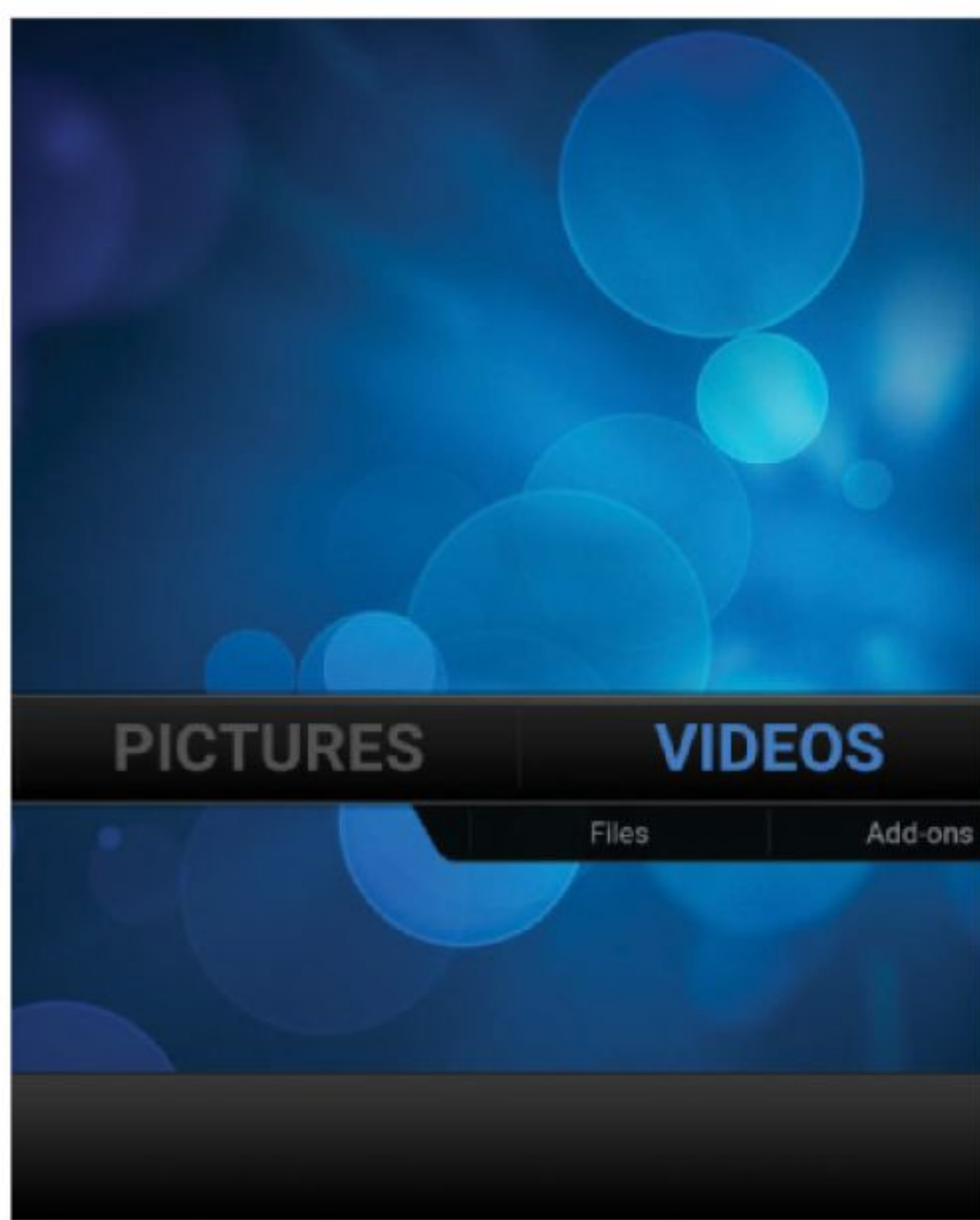
It's possible to buy Android streaming devices that are already set up to use Kodi from online stores like Amazon. However, some are configured to use channels that deliver pirated content, so to stay on the right side of the law we'd recommend setting it up yourself.



# Get started with Kodi

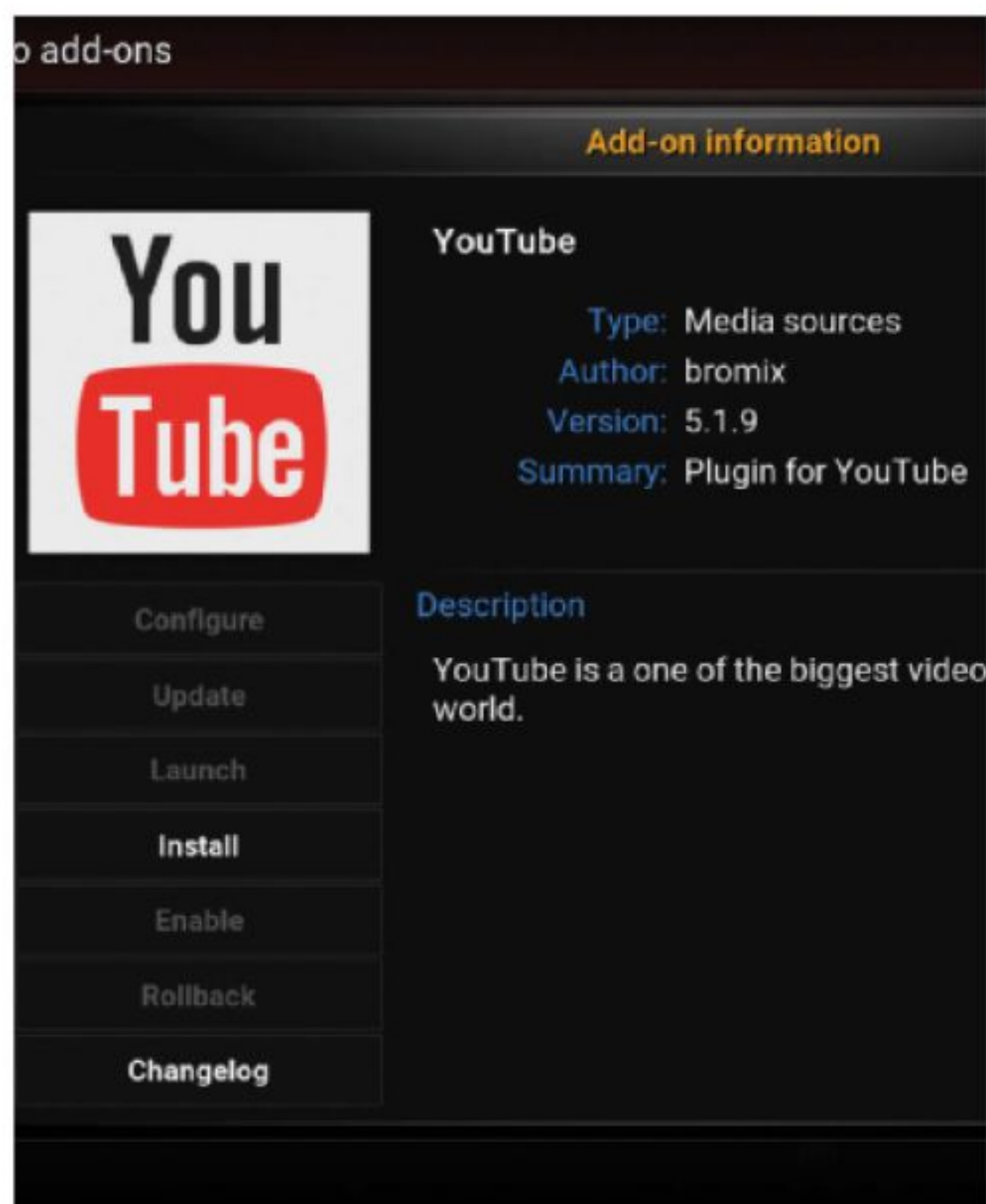
## Get to know Kodi and all its great quirks

**Kodi has an interface designed for use on a TV rather than via a touch screen.** For this reason it can take a little getting used to on an Android device. Here's a quick guide to finding your way around the app.



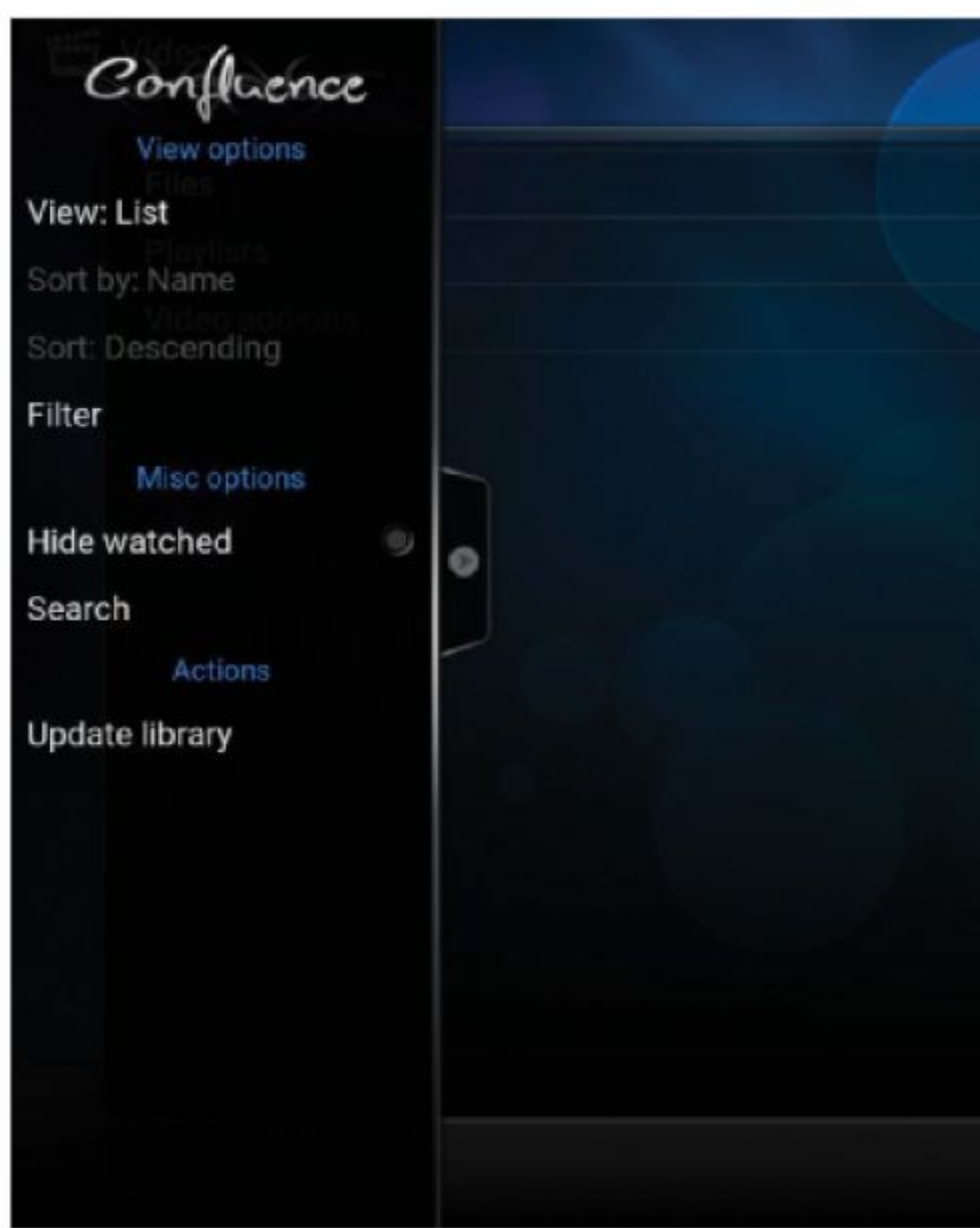
### 1 The homescreen

The central bar splits into Pictures, Videos and Music, with additional sections for apps and settings. Swipe the bar left and right to scroll through your options then tap on one to enter it. Hit the arrow in the bottom-right corner to return.



### 3 Set up add-ons

Add some of the built-in add-ons to get started. From the homescreen tap Videos, and then Add-ons. Scroll down to find YouTube, tap it and hit Install from the window that opens. The YouTube add-on will now download and install.



### 2 A sliding menu

Once you have content listed on the screen, you can filter and reorder it by swiping out the drawer from the left edge. The options are context sensitive so they will change depending on what is shown on the main section of the screen.



### 4 Watch a video

Hit the Home button on the bottom right, followed by Videos and Video Add-ons, where you should now see YouTube listed. Add a section to your Favourites by long-tapping the title – it will display under the star icon on the homescreen.

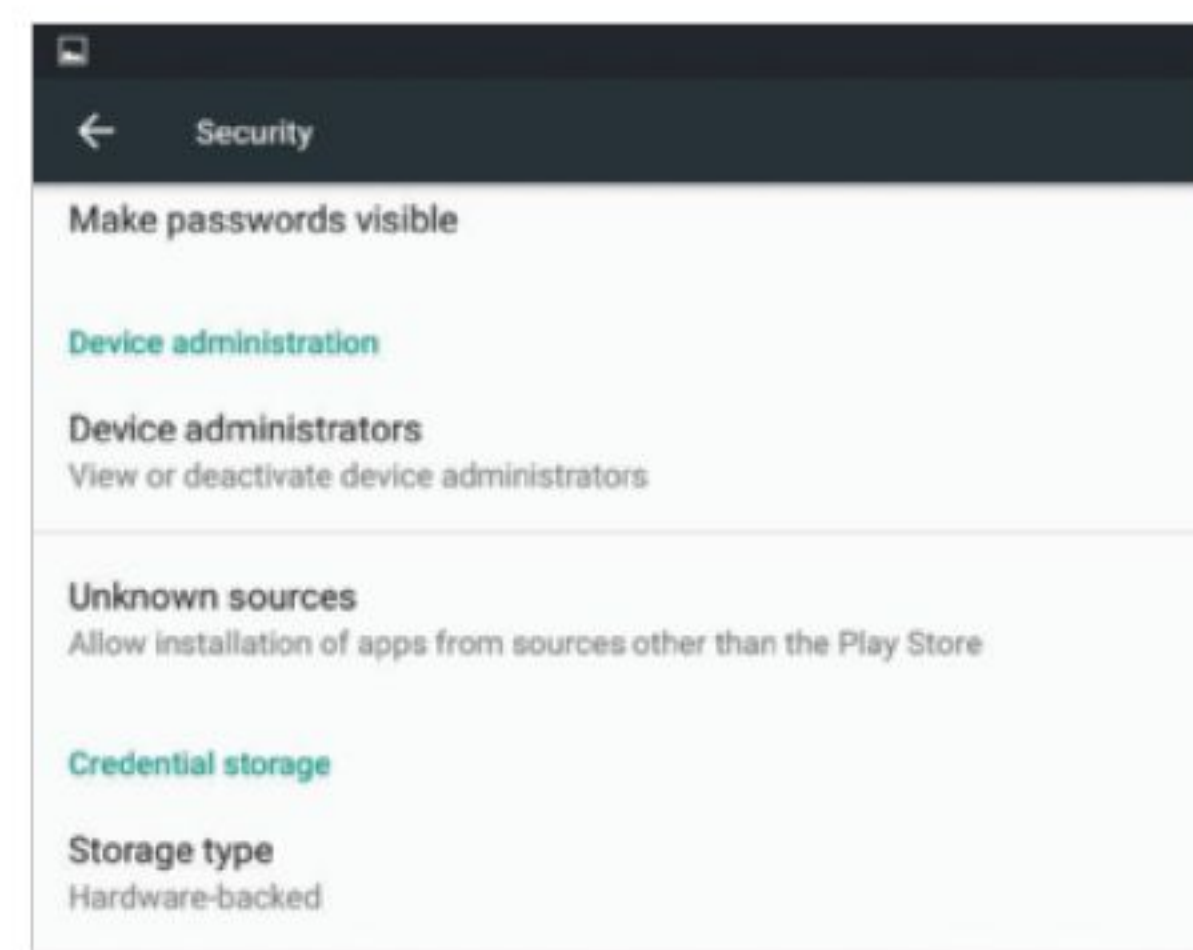


If you're installing Kodi on a device without the Google Play store, you will need to follow these instructions

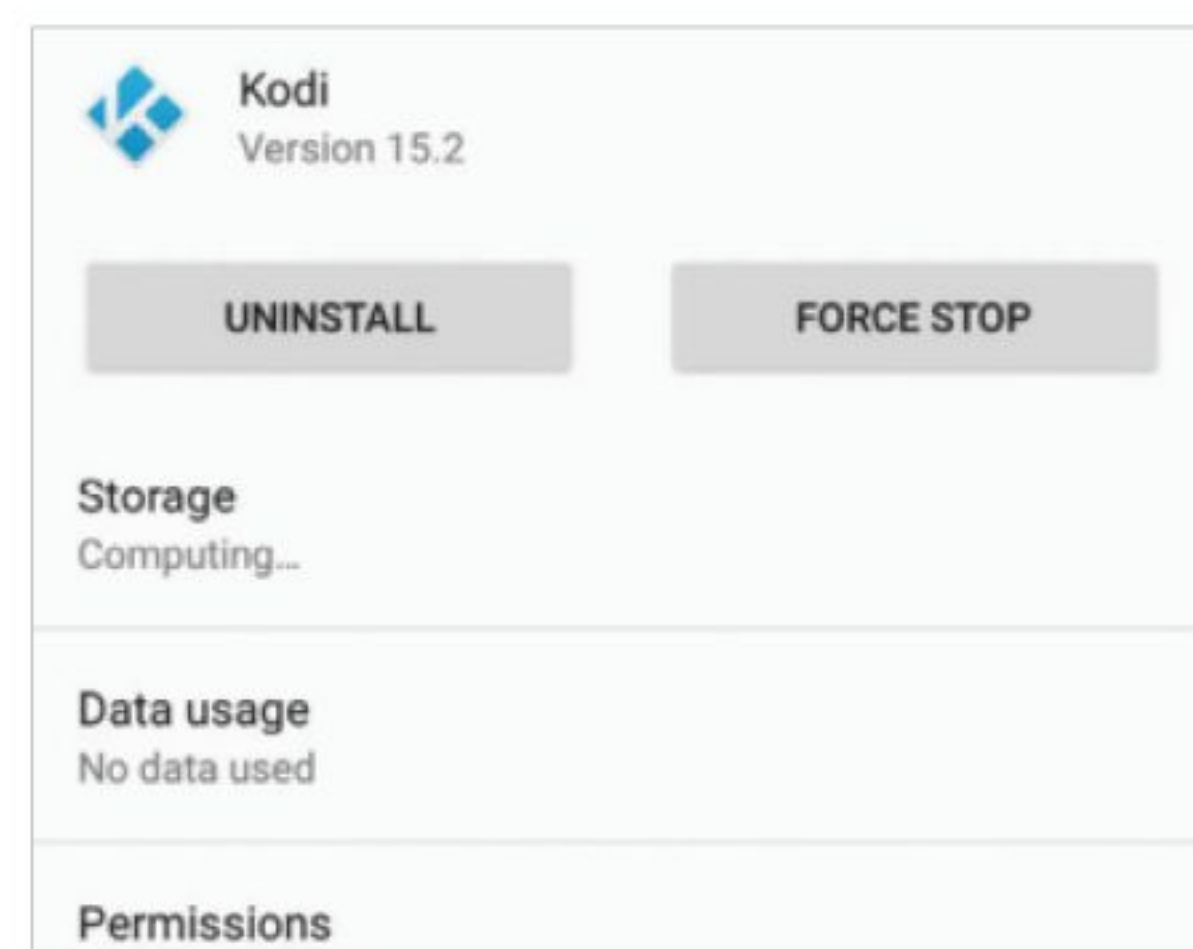
## Install apps from other sources



1 Kodi can be downloaded without access to the Play store. Go to [kodi.tv/download](http://kodi.tv/download) and locate the version for Android. Download and save it to the internal storage.



2 On your Android go to Settings>Security. Scroll to Unknown sources and tick the box as this will enable apps to be sideloaded. Now locate the Kodi app and tap to install.



3 Having sideloaded, you won't get automatic updates, although you will see a message in the app alerting you when a new version is available.

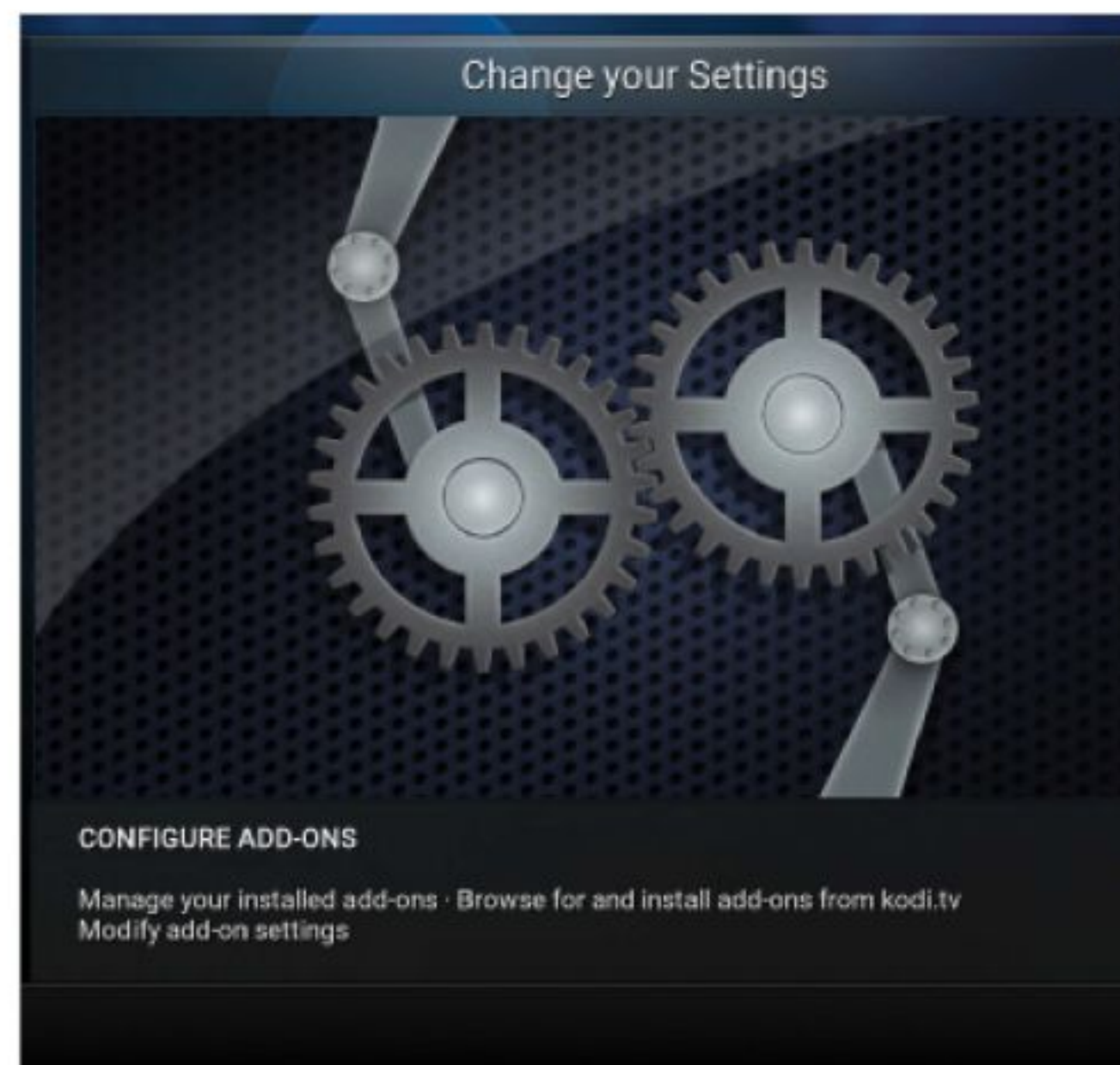


## Set up channels in Kodi

You can get TV from a variety of sources in Kodi. They're called add-ons and need to be installed and configured individually

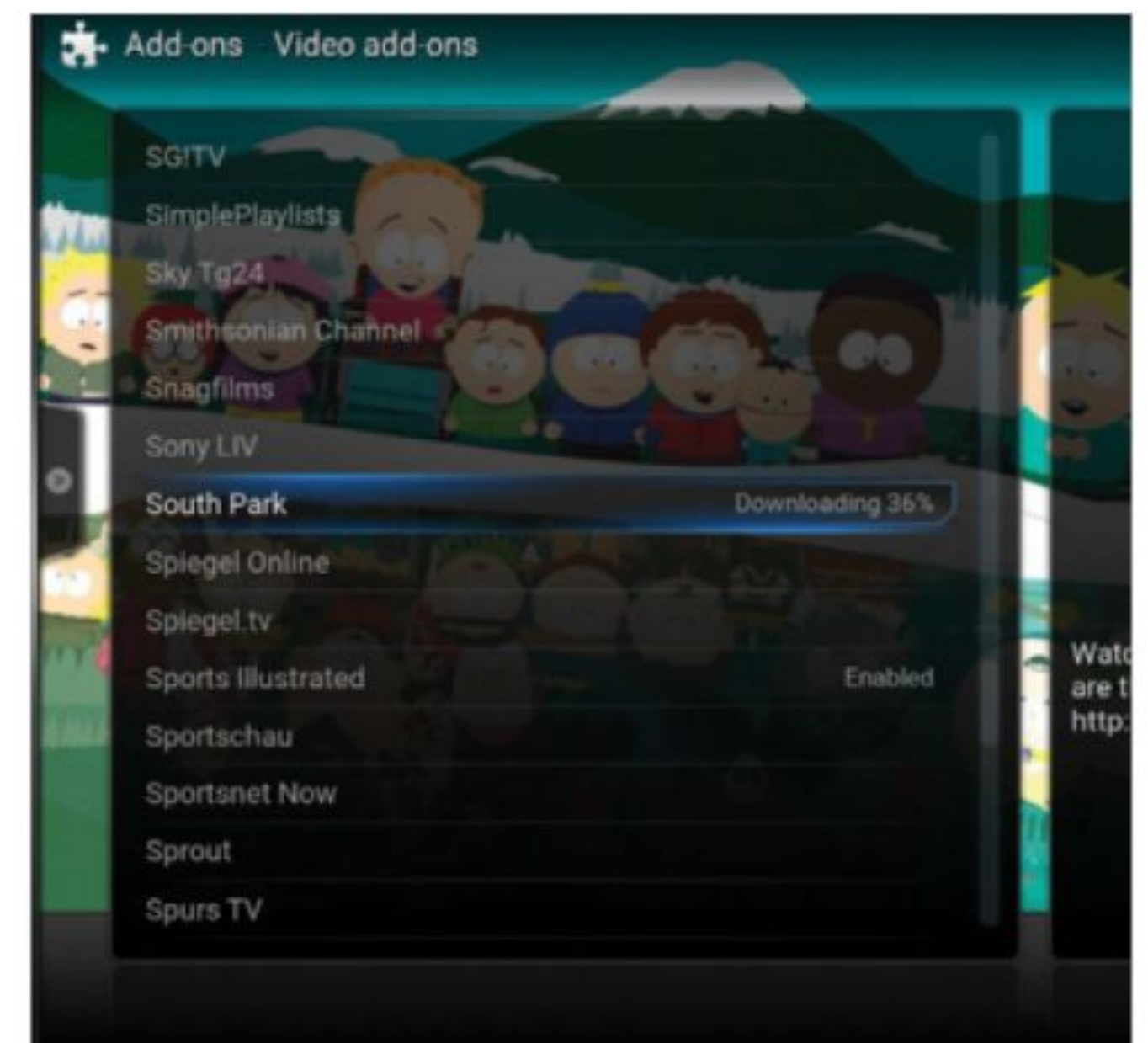
Although Kodi is able to play locally stored files – go to **Videos>Files** to do so – its **biggest strength comes as a streaming system**. However, Kodi is only a player and comes without any content built in. Instead you need to add it yourself by installing add-ons. Most of the core add-ons are already accessible from within the app and can be installed with just a couple of clicks. If you want to add content from other sources then you'll need to head online to find them.

The best places to start your search for these are **addons.kodi.tv** and **kodi.wiki/view/Add-ons** – the official pages for the Kodi service that list all of the supported add-ons. You can download add-ons direct from these pages and they will then show any additional installation details where they are required. If you do want to explore the wider world of Kodi add-ons then **tvaddons.ag** is the place to go. Note that some of the add-ons found here are more difficult to install.



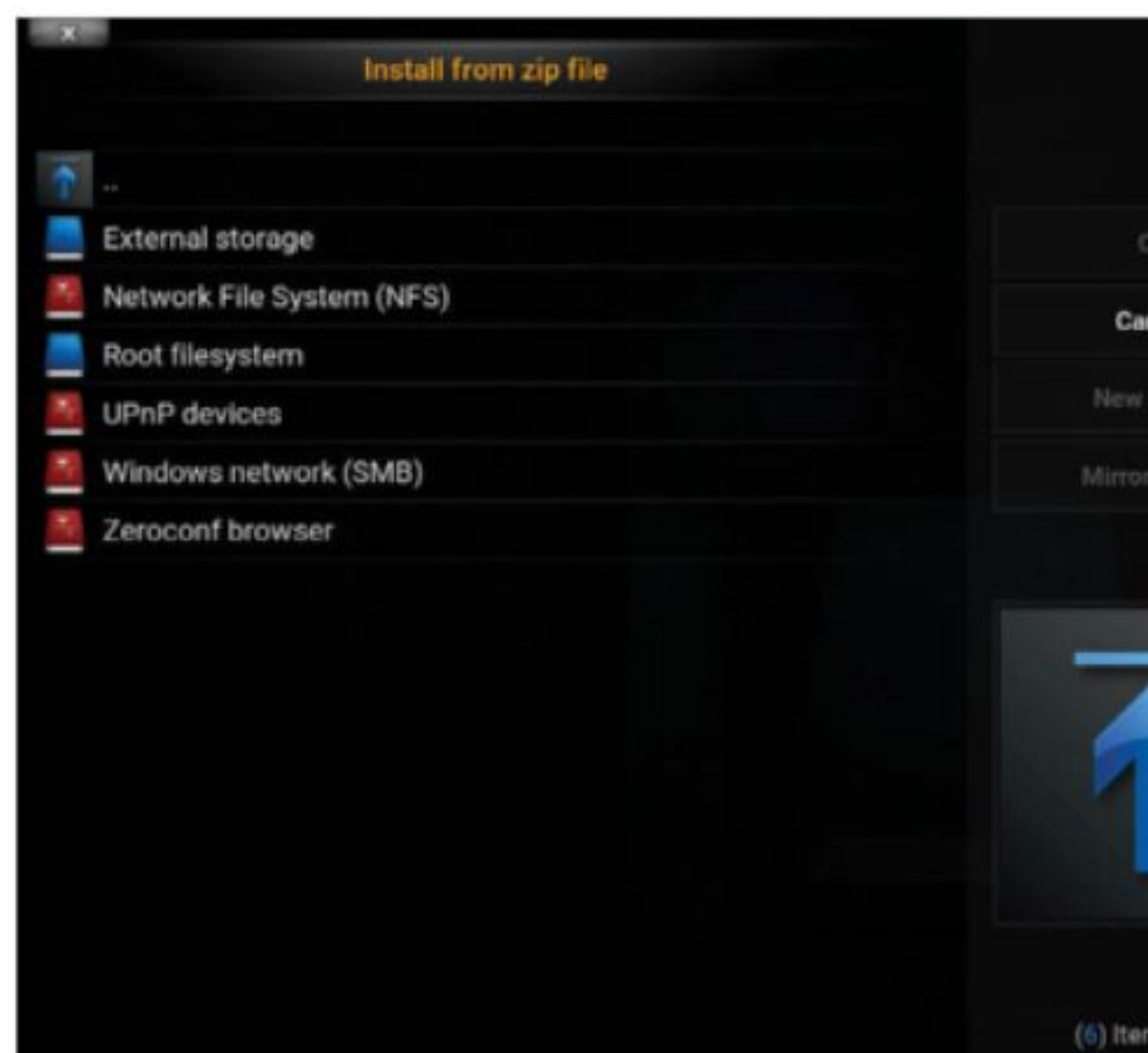
### 1 Install add-ons

To get started with installing add-ons, return to the Kodi homescreen – hit the Home icon in the bottom-left corner of any screen to do this. Now swipe your way across to System and tap on it. Choose Add-ons from the list.



### 2 Install from repository

There are two options for installing add-ons. First is Install from repository; notice you can also install weather, lyrics and other things here. Choose Video add-ons, where you'll see a list of existing channels. Pick one and hit Install.



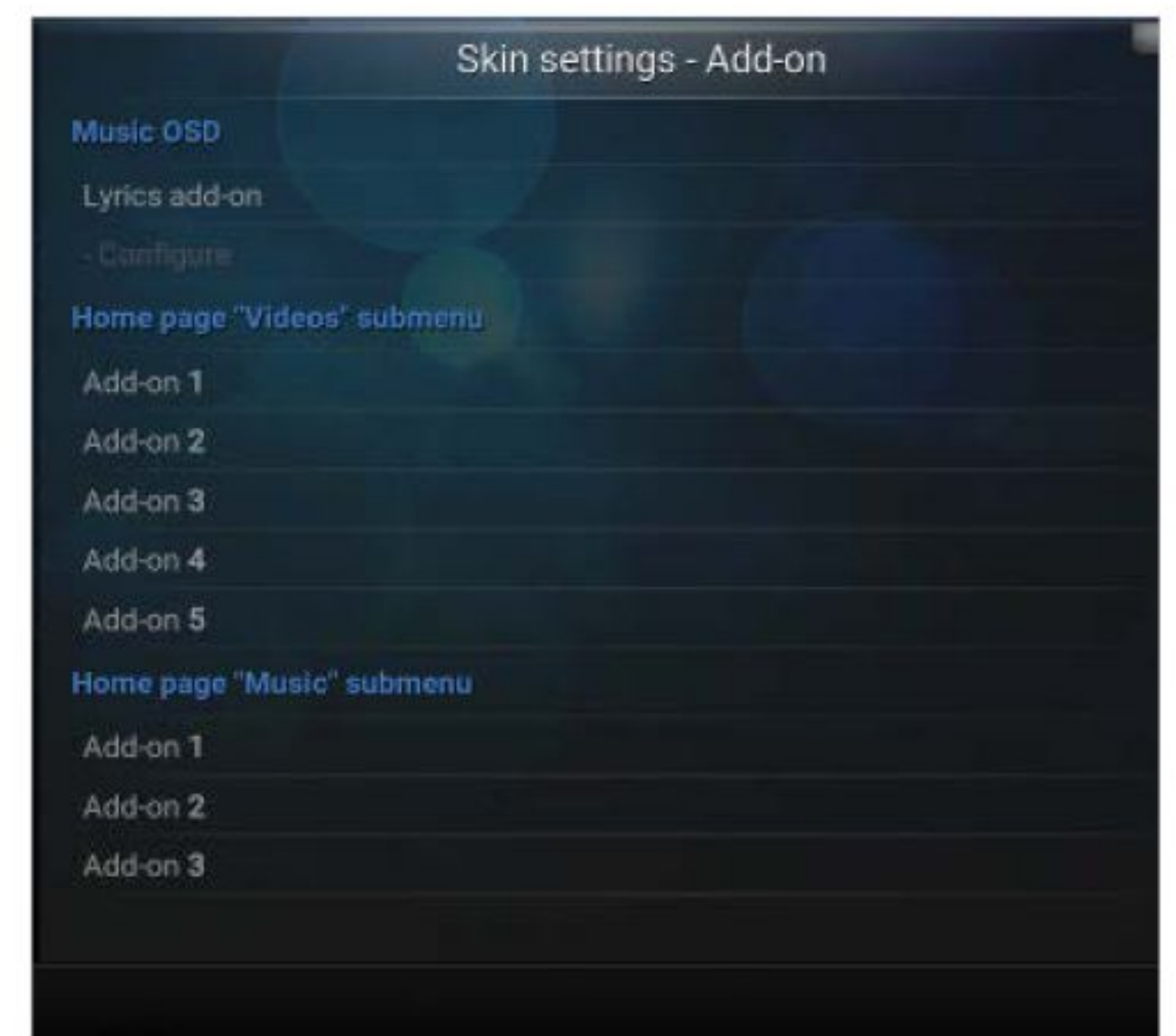
### 3 Install from ZIP

Alternatively, add-ons are available as ZIP files downloaded from the web. If you have one of these, repeat Step 1 then hit Install from ZIP file instead. Now use the file manager that opens to locate the file and tap it to complete installation.



### 4 Watch a channel

To watch a channel press the Home button and go to **Videos>Video add-ons**. All your installed channels will now be listed here so just tap on one to play it. To view the content as thumbnails, slide open the sidebar and change View to Info 2.



### 5 Add to homescreen

Finally, add a shortcut to your homescreen by going to **System>Appearance>Skin>Settings>Shortcuts**. Under Home page "Videos" submenu, tap Add-on 1 and choose a channel to add. It will now appear on your homescreen.



**Message us!**  
Got a top tip to keep your  
Android safe? Let us know!

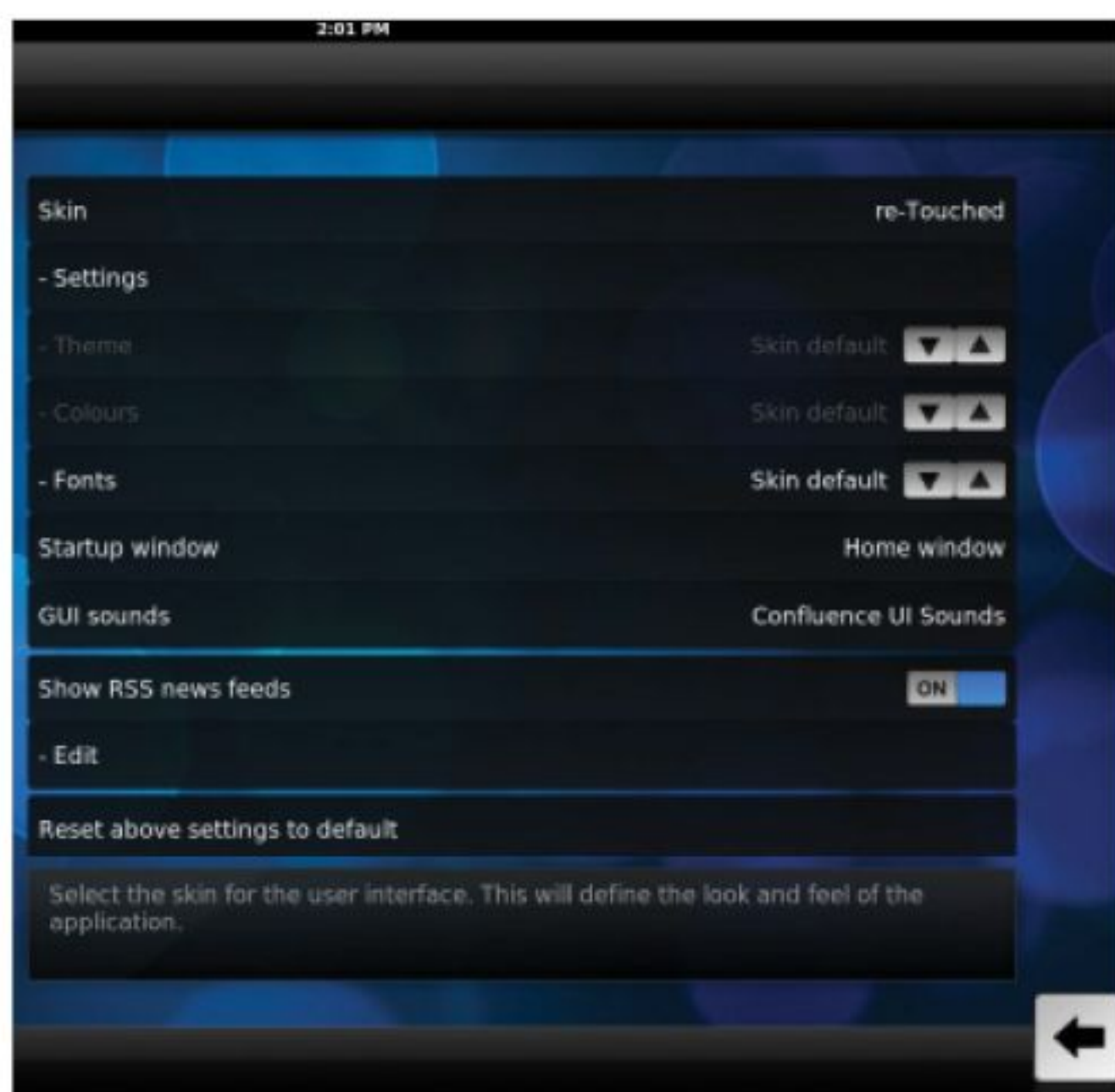


» masterclass  
**Android TV with Kodi**

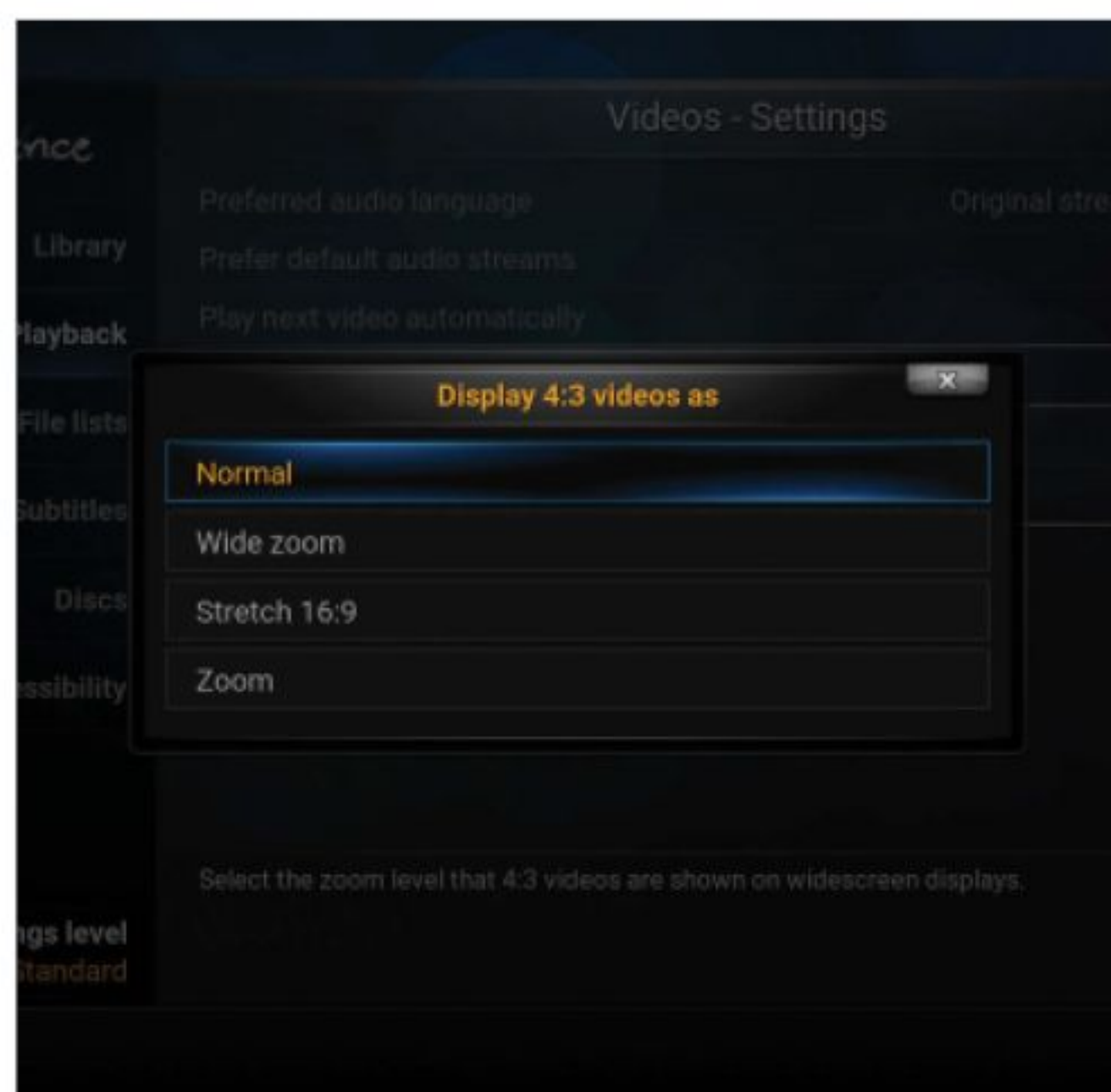
# Get more from your TV now

Get the best performance possible from your new Kodi system

Kodi works pretty well with all the default settings in place, but if you're a more serious user then you will get a great benefit from delving into the settings to configure the app to work exactly how you want it to. Kodi's settings cover pretty much everything, from choosing new skins (including a smart Apple TV-inspired one) and setting up weather alerts, to controlling the quality of the video playback. You can even set the app up as a kind of PVR, showing you when new episodes of your favourite shows have arrived and you can download plot and actor information from sources such as IMDB. If you're a Netflix or Amazon Prime Instant Video user, then Kodi can add real value to these particular services.



**1 Change the skin**  
Select Skin in the left-hand pane then Skin again in the main window. You'll now see a list of available skins (two by default) and you can install additional ones by tapping on Get more. Pick the one you want and click Yes to confirm.



**2 Playback settings**  
Go to Video>Playback to configure the playback quality. This includes language settings and what to do with content that doesn't fit the aspect ratio of your screen. Also hit the Play next video option for Netflix-style binge viewing.

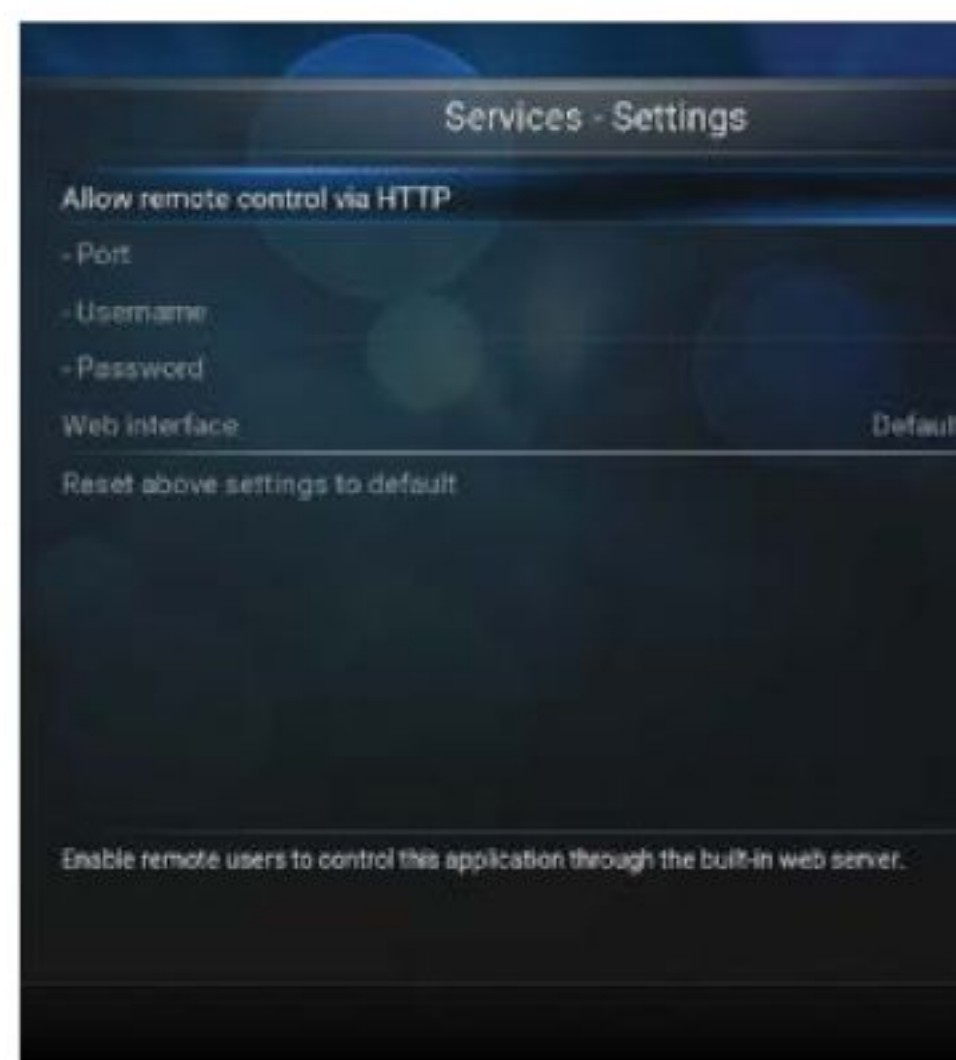


**3 Record live TV**  
Go back to the main Settings screen and select TV, followed by Recording. With this option you can record live TV just like on a PVR. This setting enables you to choose exactly how long the service should automatically record for.

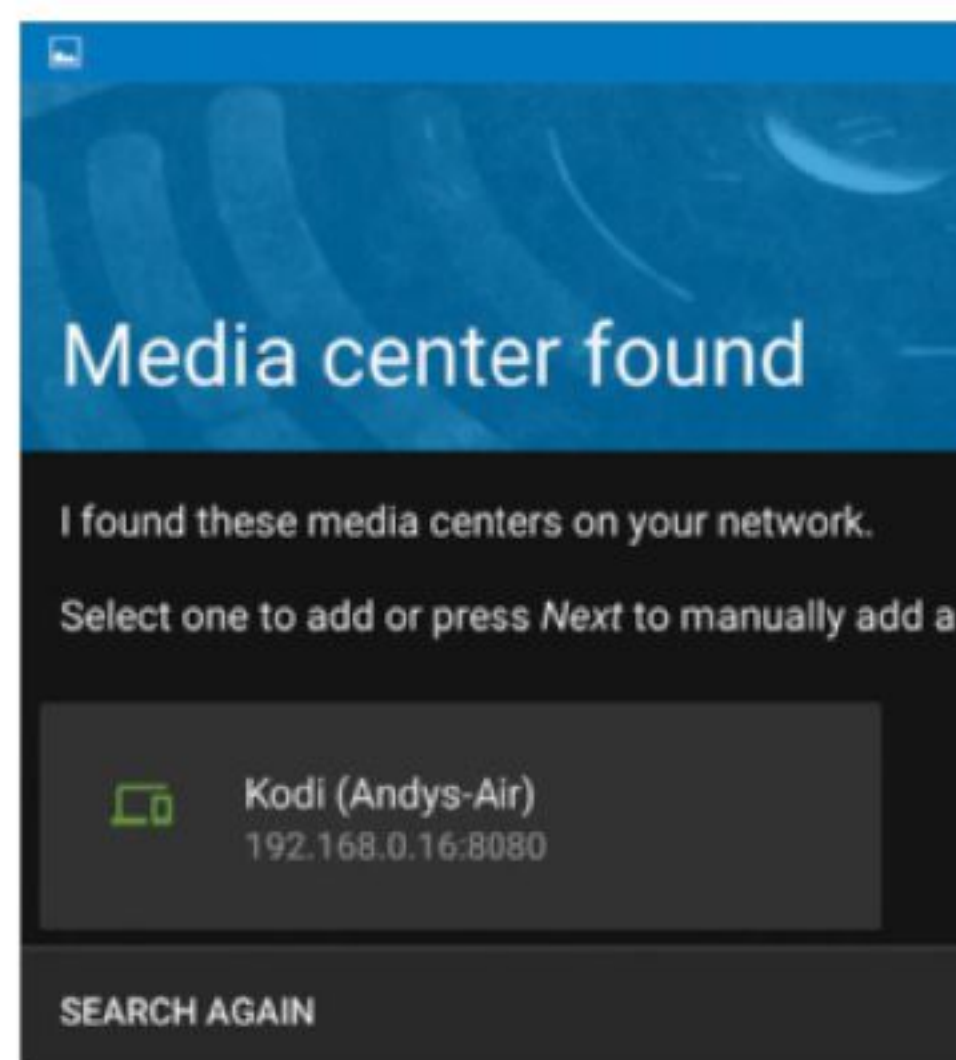


## Set up a remote control

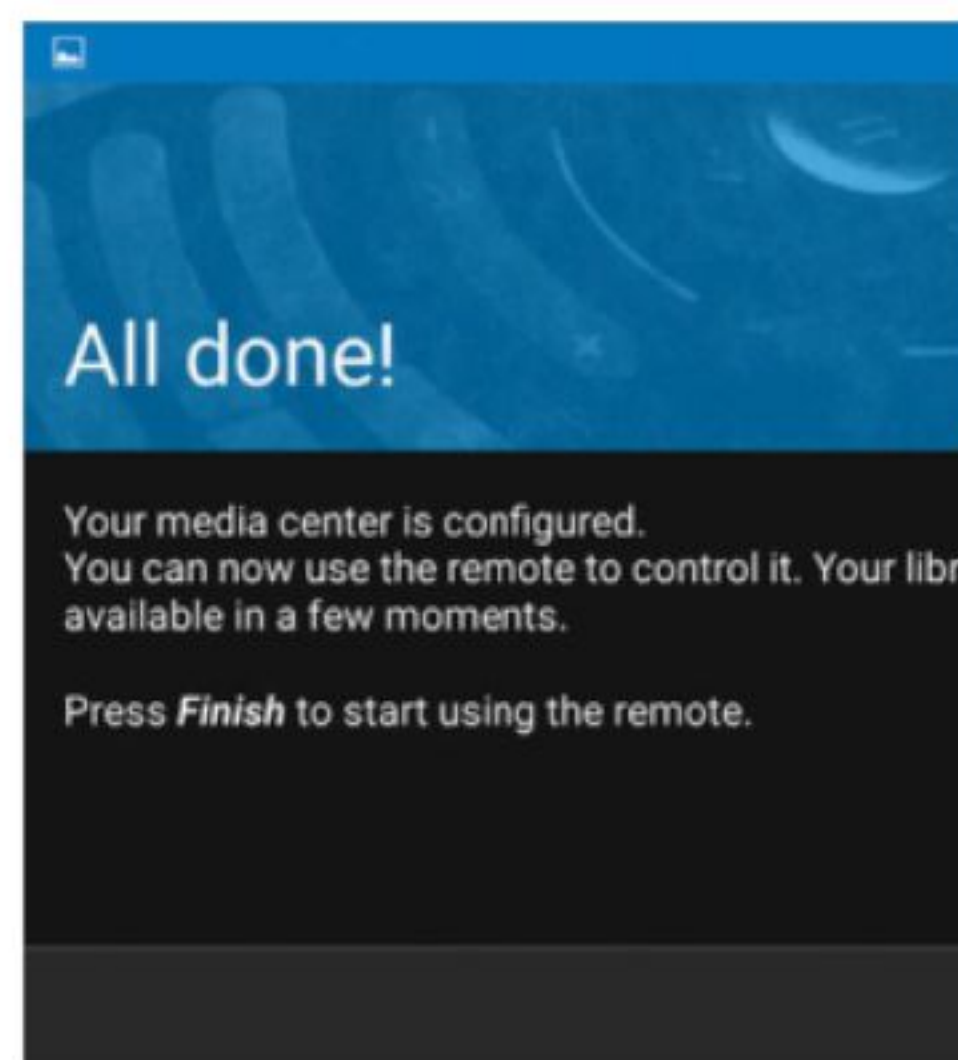
You can use your Android phone as a remote for another Kodi set up on the same Wi-Fi network



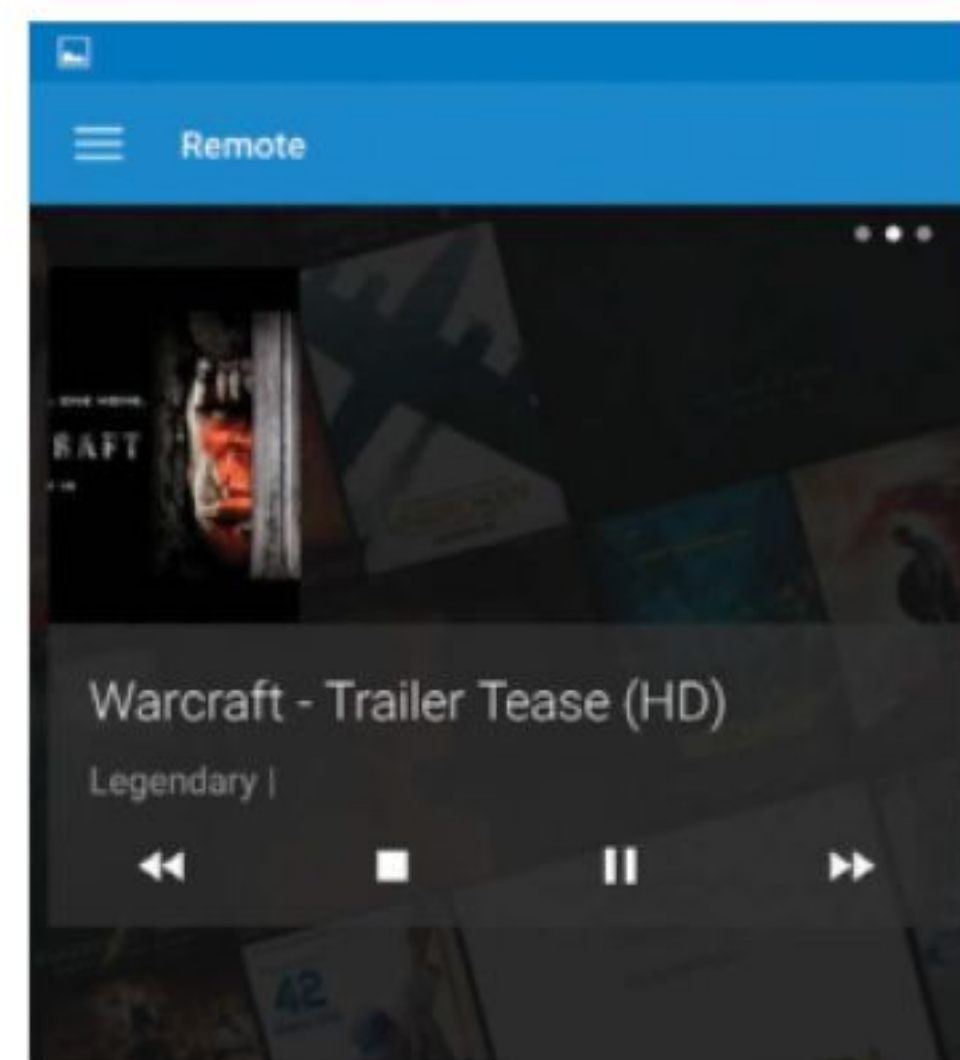
**1 Set up Kodi**  
Configure Kodi to use a remote by going to System>Settings>Services>Webserver, enabling Allow control via HTTP and noting the port number and username. Then go to Remote Control on the same screen and enable both options.



**2 Download Kore**  
Head to the Play store and download Kore, the official remote app for Kodi. Make sure your phone is connected to the same Wi-Fi network as your Kodi device then launch the app. Tap Next to scan for and locate your Kodi device.



**3 Connect the app**  
Kore should identify your Kodi setup so when it does, tap it to connect. Enter the port number and username from Step 1 when prompted then hit Test. If you have problems, check your firewall isn't blocking the incoming connection.



**4 And you're done!**  
A message will appear to say you are connected. Tap Finish to get started. A standard remote app will now be there – you can select content to view, change to different add-ons or play, pause and stop your chosen videos like a real remote!



App used >> Weebly – Create a Free Website Works with >> Android 4.0 and up

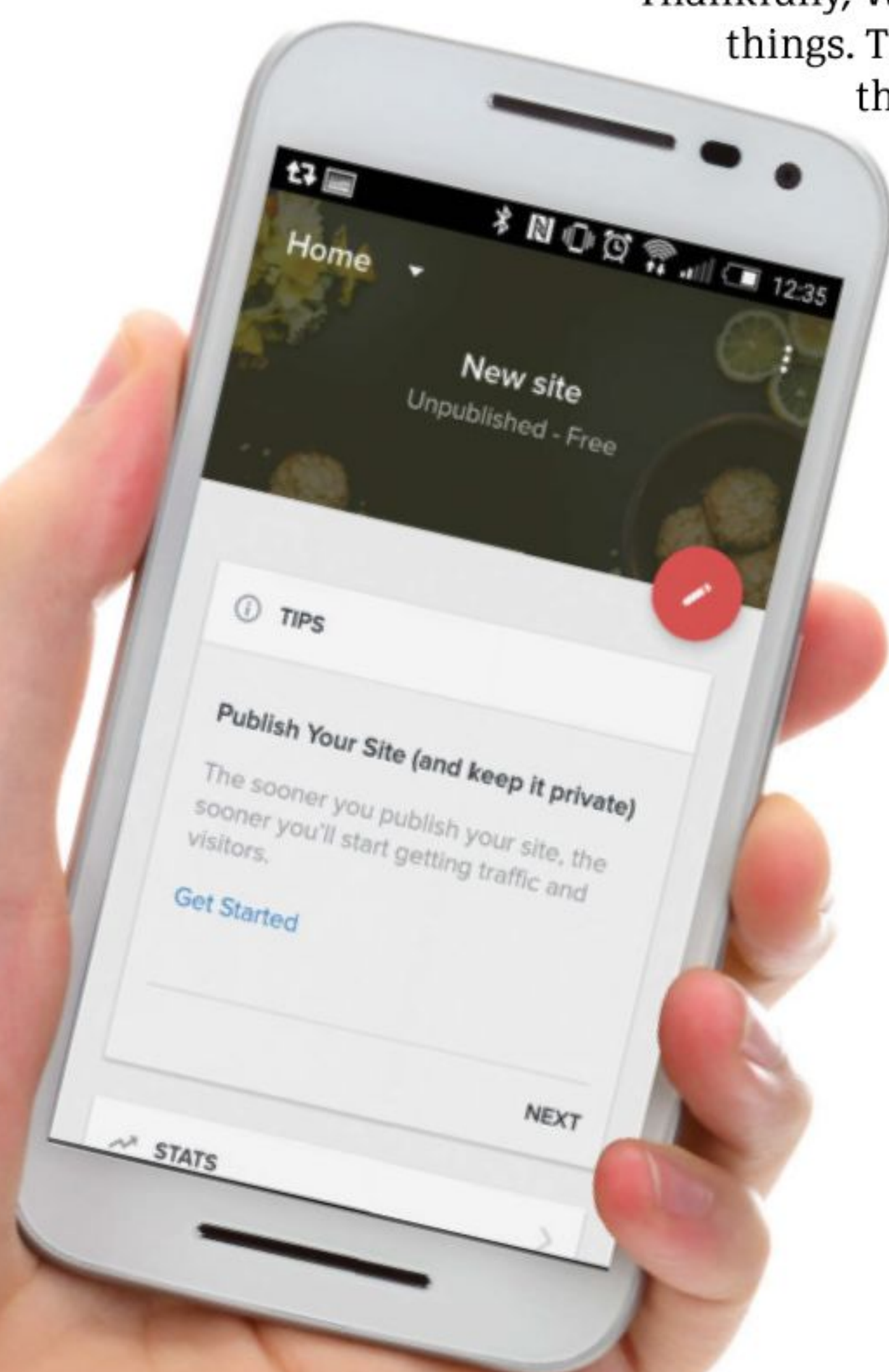
# Create a free website with Weebly in minutes

Use this simple app to create your own free website

**Weebly is a free app that lets you use an Android smartphone or tablet to build your own website.** There haven't been many apps on the Play store that let you create in this way and those that are there have been fiddly and cumbersome.

Thankfully, Weebly takes a lot of the fuss out of things. There are a whole swathe of options that let you customise the look and feel of your site and while the end

product is never going to be as good as a site built from scratch, most of us don't have the time to learn CSS. In this tutorial we'll show you how to make the bones of a site, explain the clever interface and walk you through how to set your site live. You won't need any previous website building experience to get the most out of this one and if you've got your phone or tablet to hand it shouldn't take more than half an hour to get your new site online.

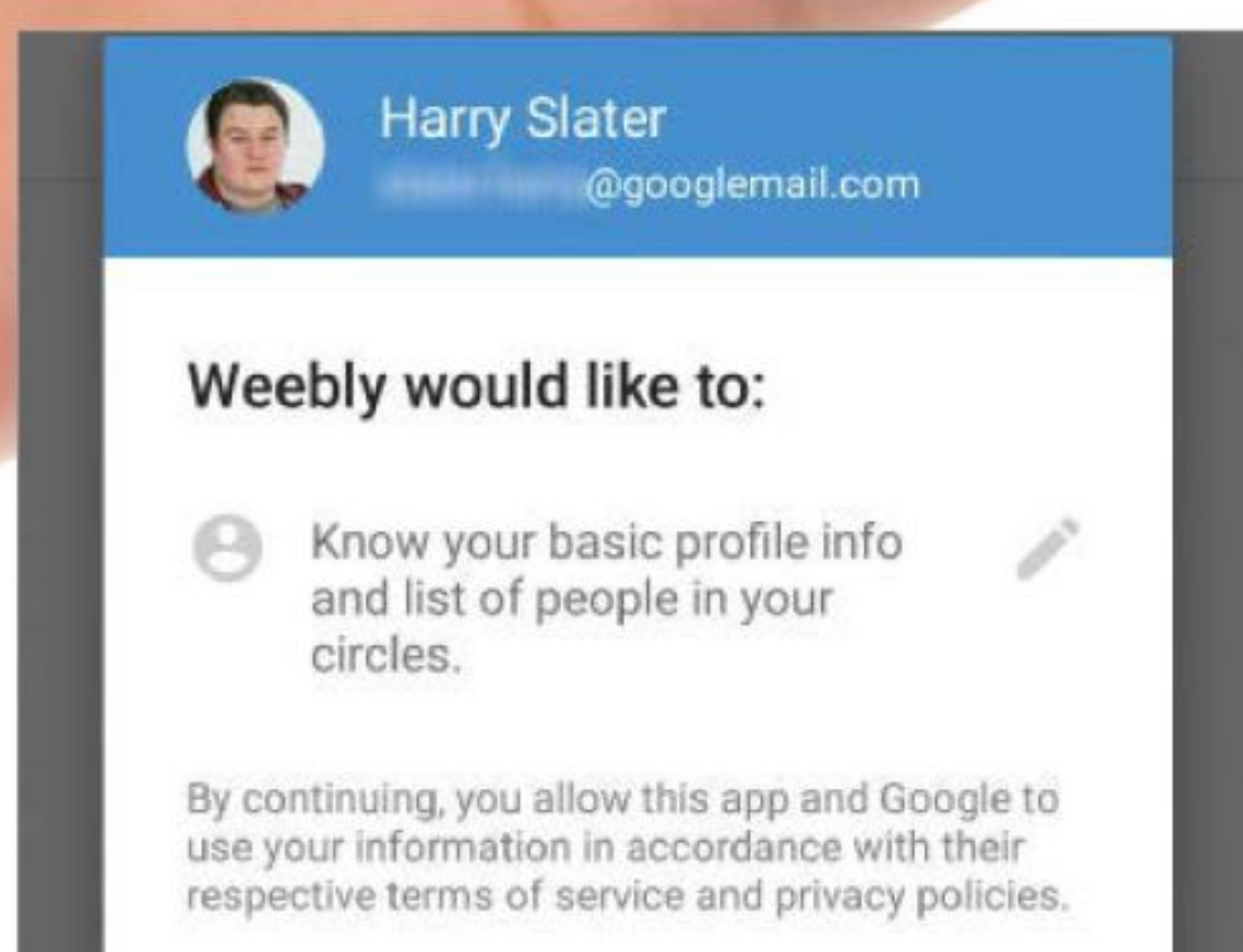
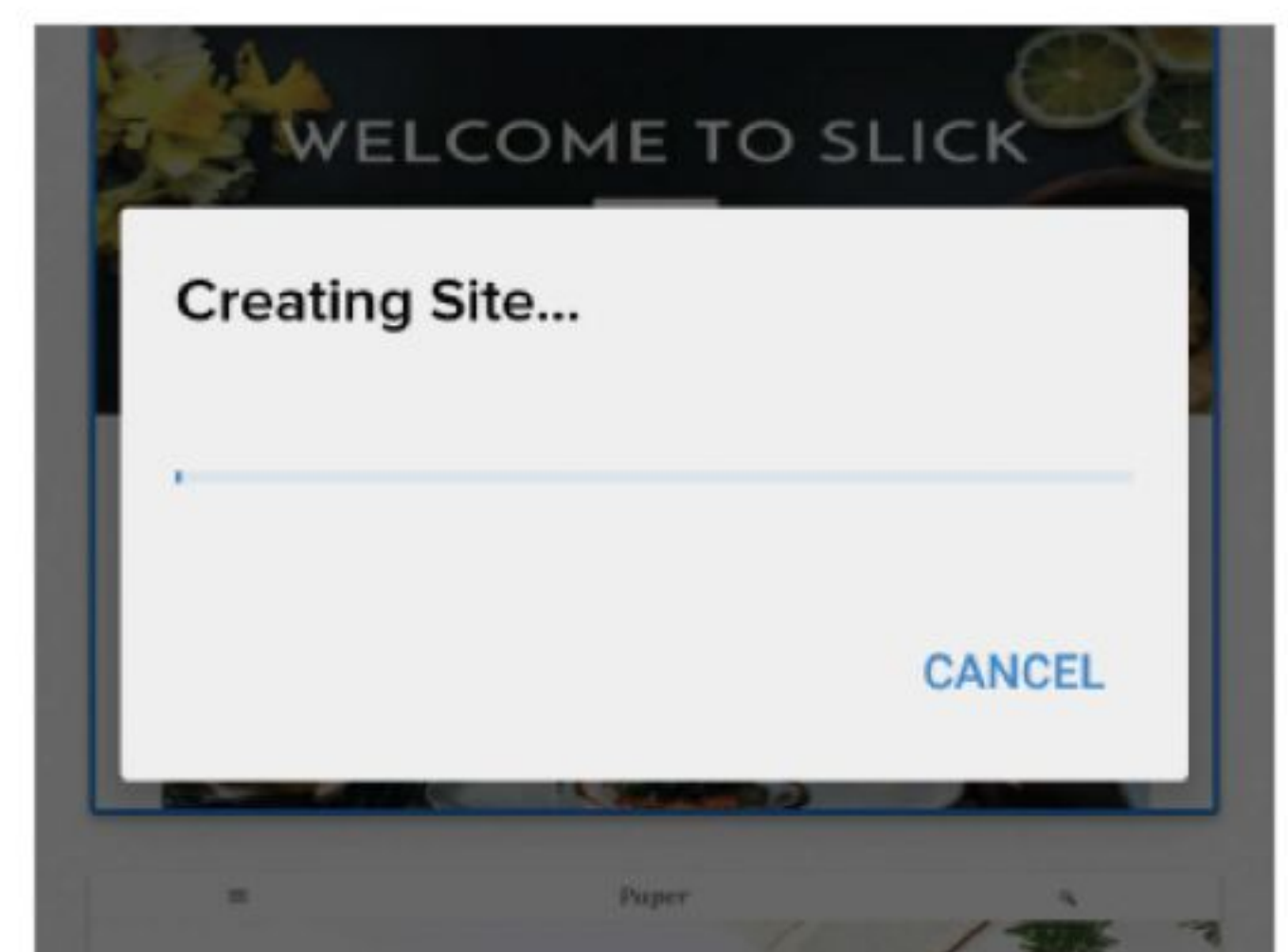


## 1 Download the app

Head to the Google Play store and download the app. It won't cost you anything and it doesn't take very long to install. When it comes to what device to download it on, we'd suggest one with as big a screen as possible. Open it and you're ready to start.

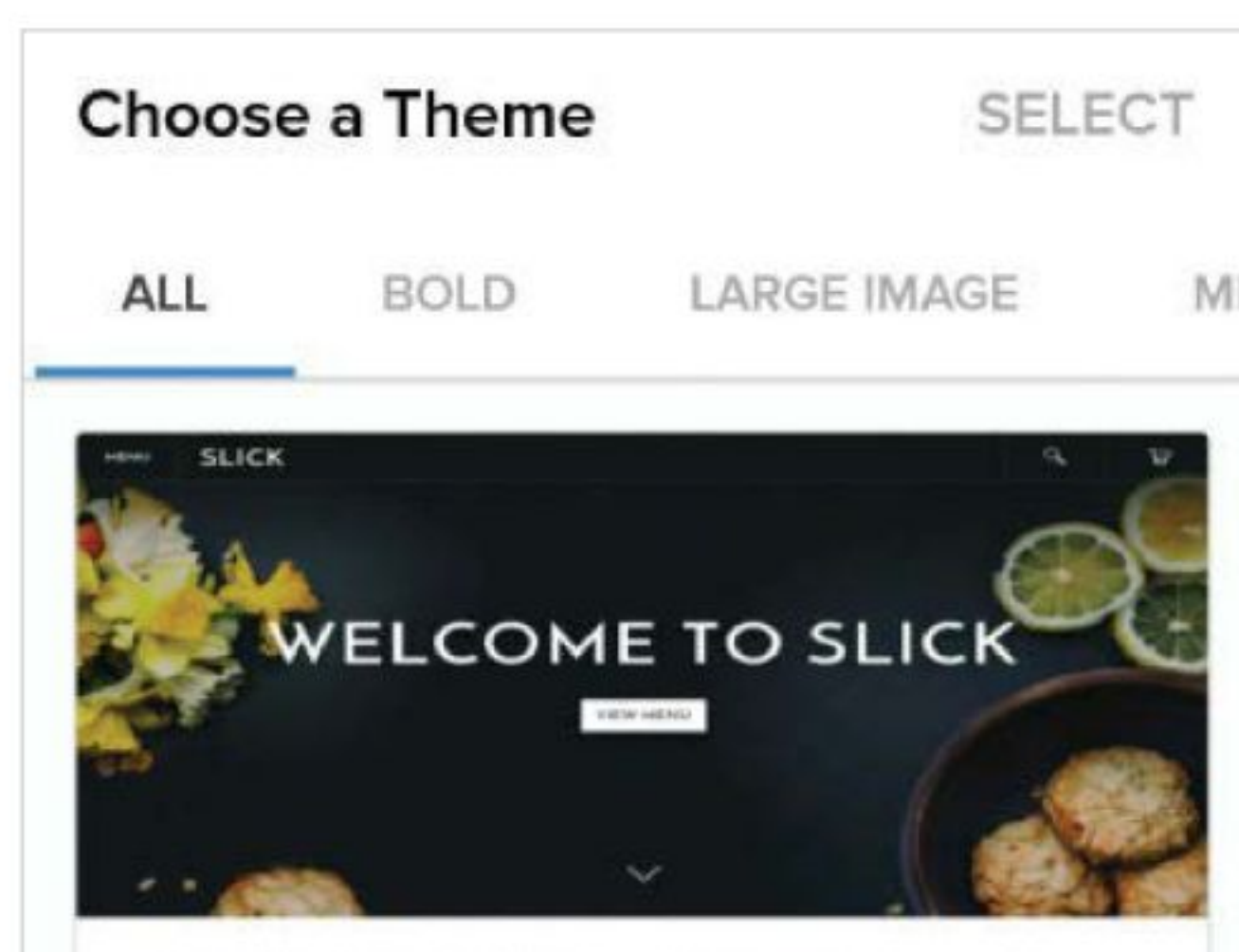
## 2 Make an account

Before you get to building you'll need to start an account. You can either sign in with Facebook, your Google account or create a new account with Weebly. All of them give you the same creation options so pick the one that works best for you and then tap through.



## 3 Accept the permissions

If you chose to use your Facebook or Google account, you will have to give Weebly access to some aspects of your profile. If you're okay with that then tap to agree. If not, you'd be better creating a stand-alone Weebly profile. It only takes a few seconds to start one.



## 4 Pick a theme

After you have signed in, you can start the fun process of actually making your site. First you'll need to pick a theme. This will be the core of your website so pick one you like the look of. You can customise pretty much every aspect of the theme to tailor it to your needs.

## 5 If you build it

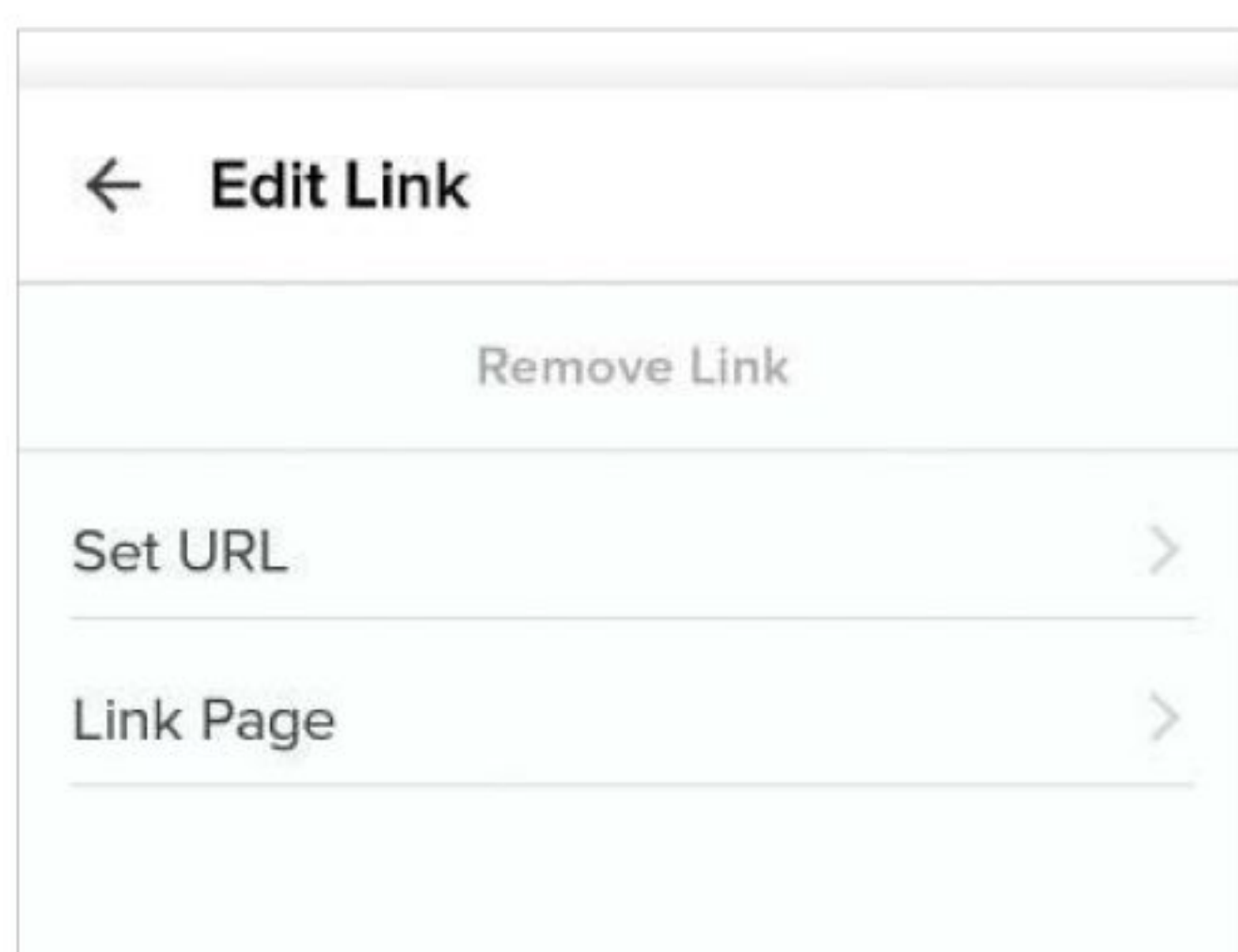
It will take a minute or so for the app to create the template for your website. If you have any text that you want to appear on the site, now would be a good chance to email it to yourself or open the app you have saved it in on your phone for easy reference.



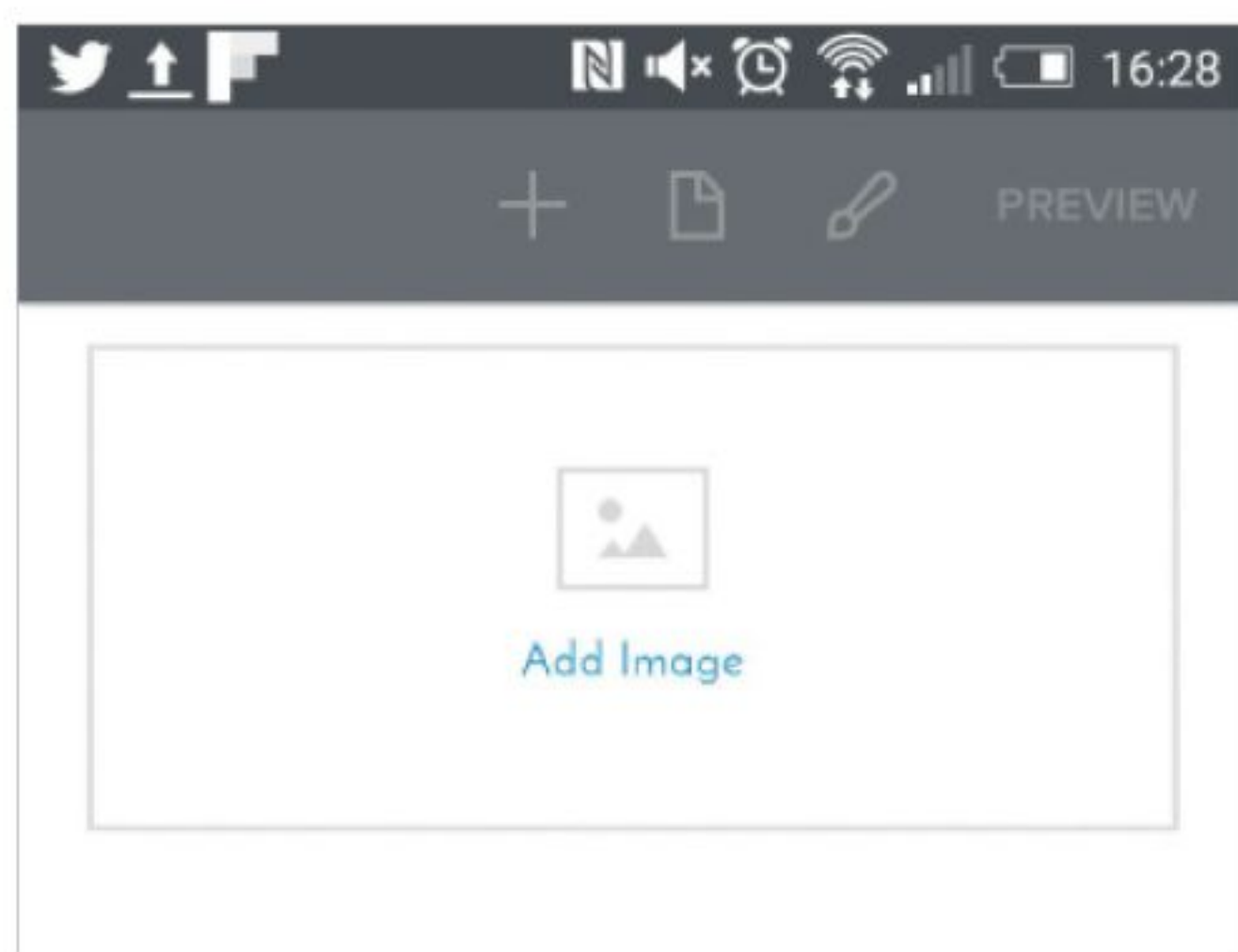
**Get in touch**  
We're on Facebook and Twitter, or just drop us an email



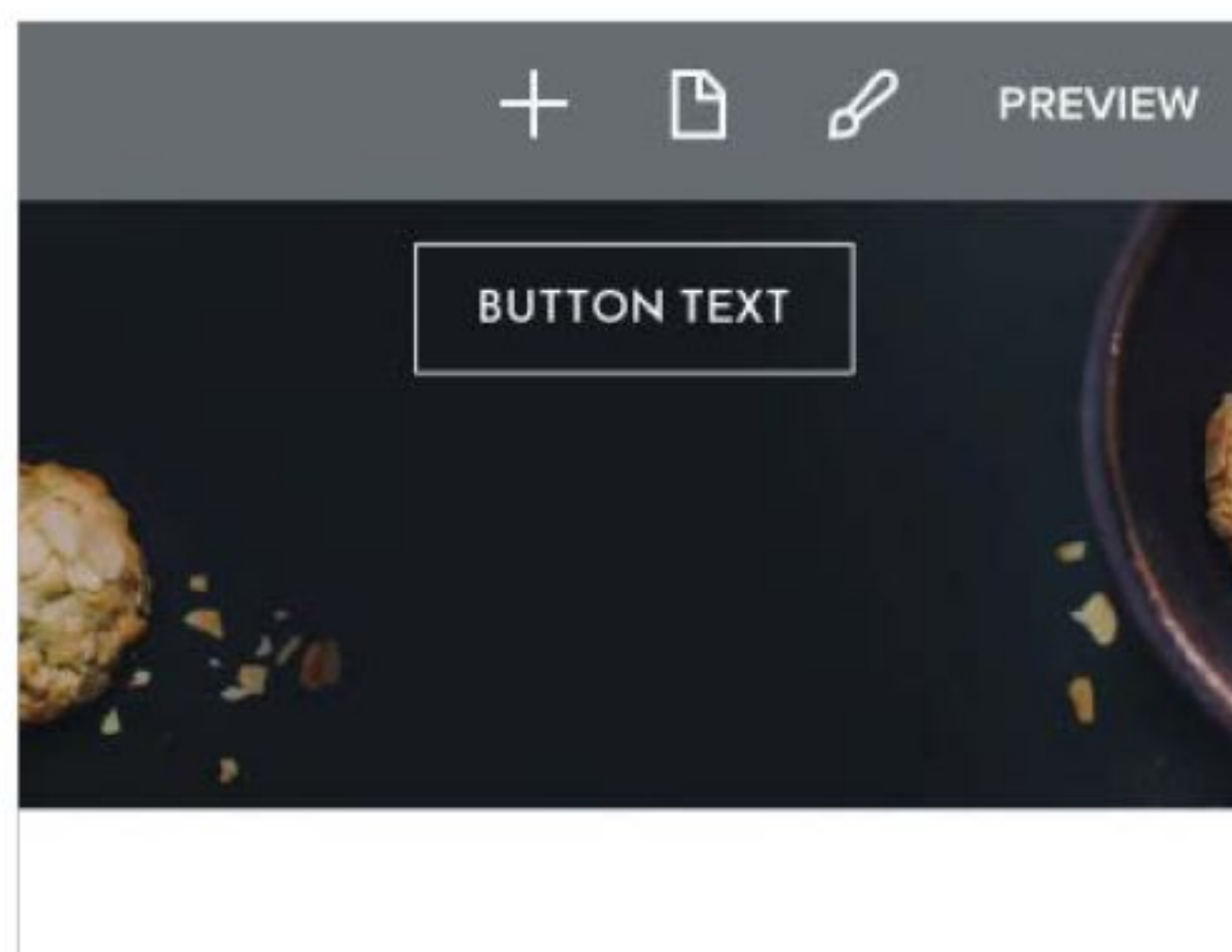
**6 The fresh template**  
The app will give you some hints to how everything works after it has built your template. This is the basic UI and it features everything you need in order to make your site. Give it a headline by double tapping the headline box and then opening the text editor.



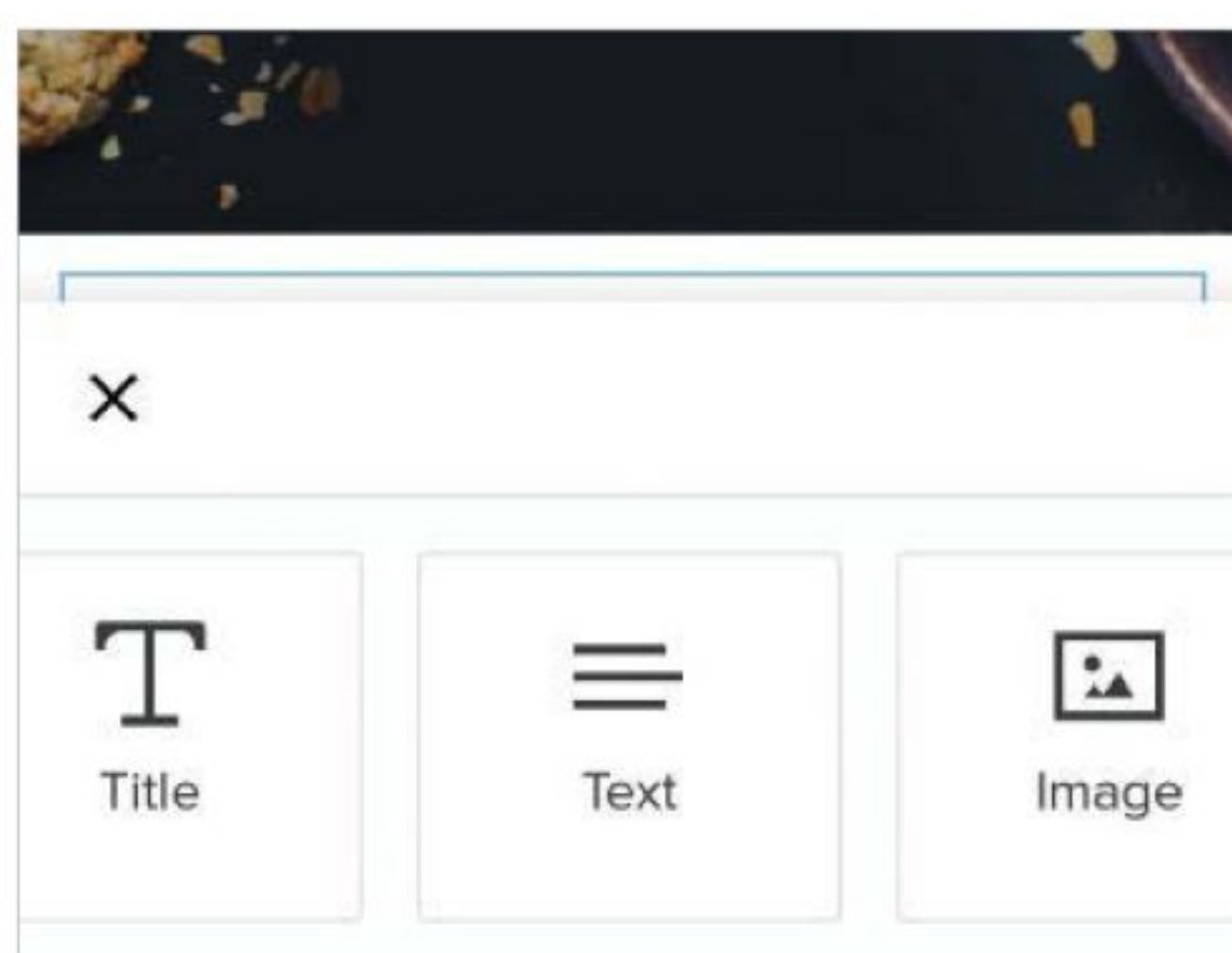
**8 Make a link**  
You make links using the text editor; you can link to exterior websites or to pages within your own site. To link to exterior sites put the URL into the editor and the app will do the rest for you. To link to a page within your own site, just simply choose the page to link to.



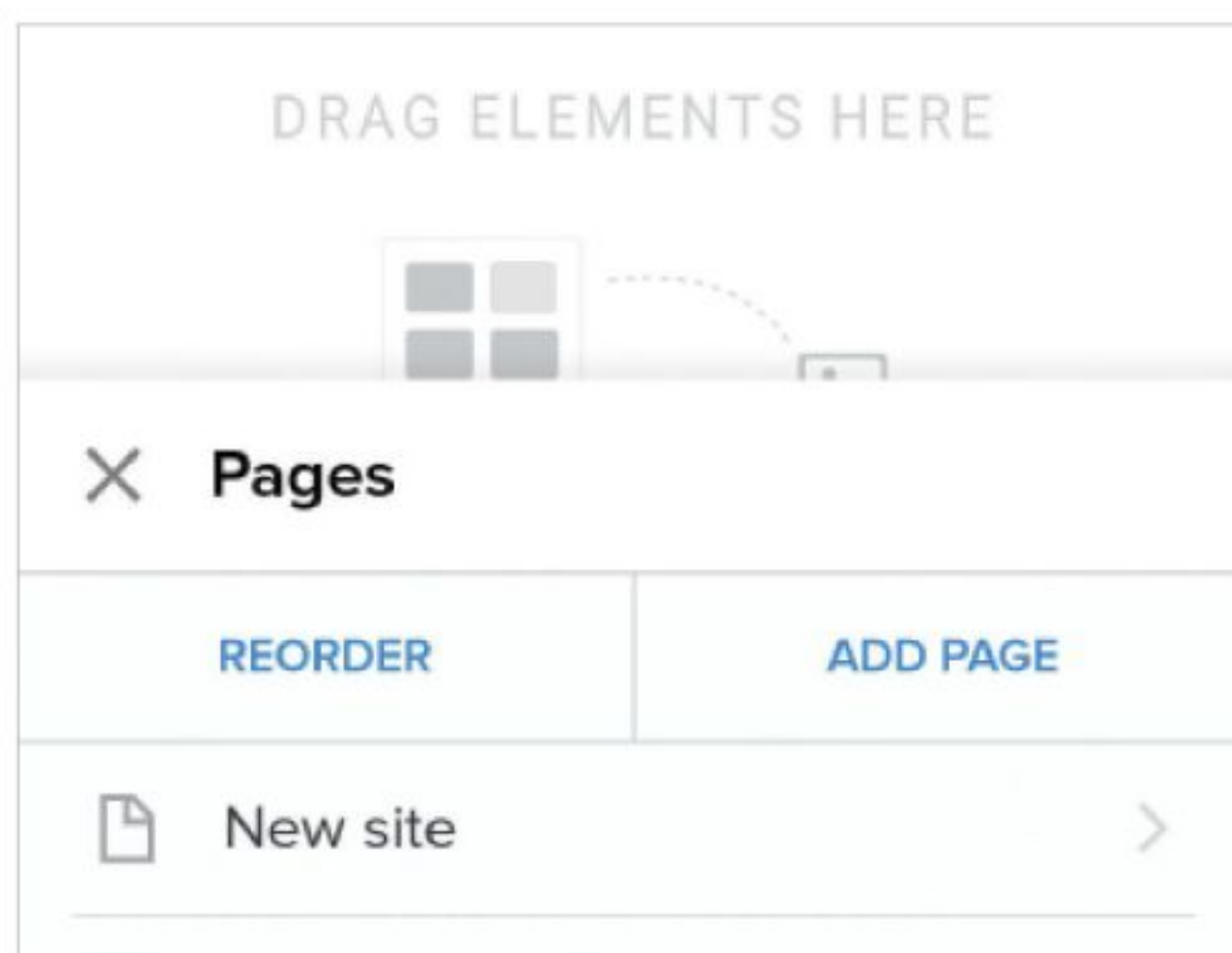
**11 Drag and drop**  
That's the basis of the app. Choose what you want to put in from the + menu then place it where you'd like it to go on your page. Drag the image box, for example, and once it's placed you will be given the option to choose what you would like to display.



**7 The button text**  
Bear in mind that different templates have different aspects so some of these might not be applicable to your choice. The button here is a link that you can insert into the header of your site. Change the text in the same way you changed the text of the headline.



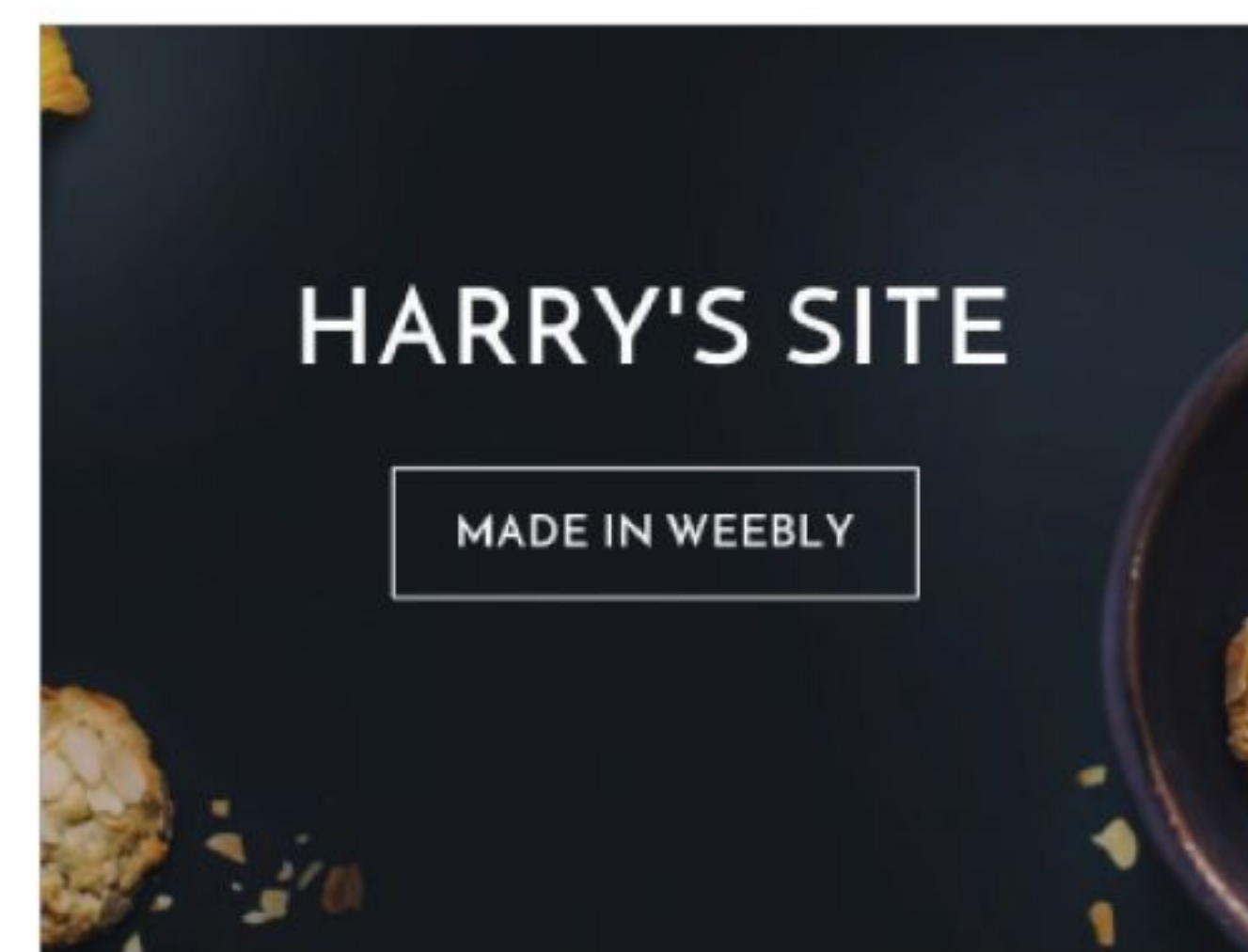
**9 Make more content**  
Once you have changed the header, it's time to work on the body of your page. Tap on the + icon. Here you'll be shown the elements that you can add to your page: some of them you'll need to pay to use, but there are enough free items to make a decent site.



**12 Turn the page**  
To begin with, you have three different pages on your site – you'll need to edit each of them. You can add more by tapping the page icon along the top of the screen and changing the names of your pages the same way. They'll link automatically with a drop-down menu.



**10 What does it mean?**  
The theme sets a lot of parameters for the content you can add to your site. It defines the font and plenty of other things too. To create some text, drag a title somewhere on your page and change the text. Then just do the same with the text icon too.



**13 Time to publish**  
When you've finished working on your site, tap the Preview button placed at the top of the screen. This will show you what your site will look like on mobile and on desktop. If you like what you see, tap Publish and your site will go live. You'll be given the URL too.



App used » ClearView Gestures Works with » Android 4.1 and up

# Create your own gestures

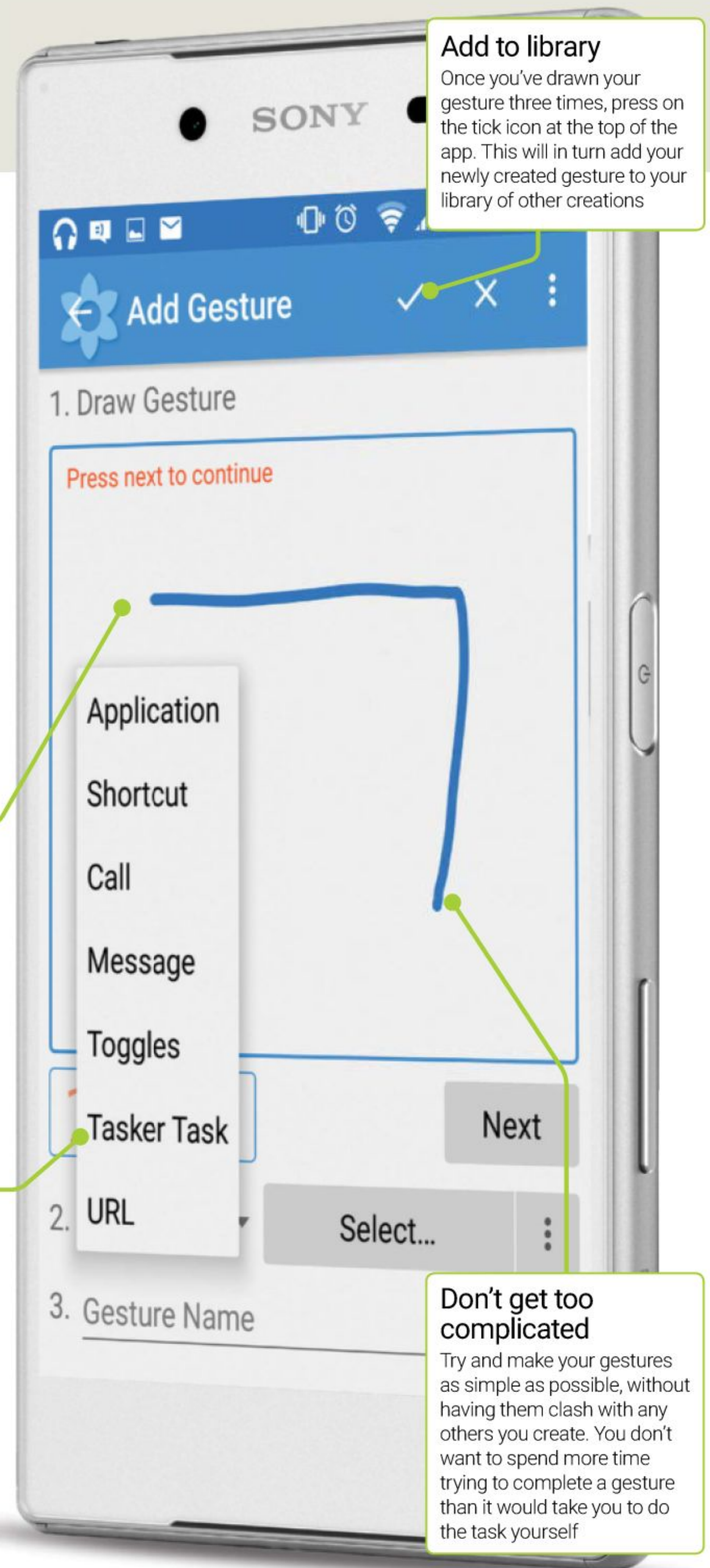
Implement your own gestures to make opening apps and settings faster than ever

Some of the more mundane features on our smartphones may not be overly complicated, but they can take up more time than you want to give them. However, with the help of the ClearView Gestures app, it's now possible to create your own library of gestures that can be used to perform these mundane tasks quickly and efficiently in just a simple stroke of your finger. Trust us when we say that you'll save a surprising amount of time once you start using gestures to perform tasks.

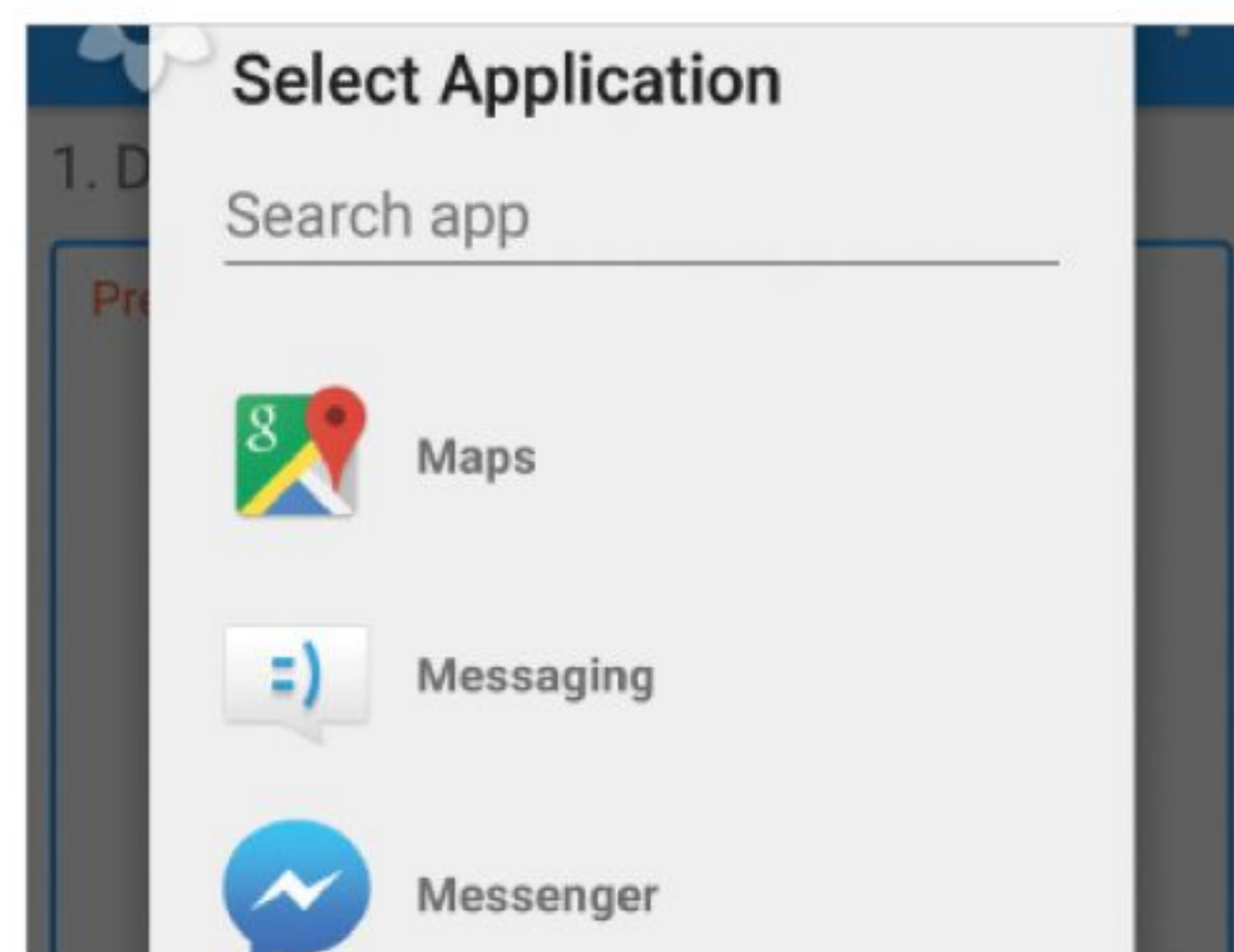
Once your library of gestures starts to take shape, it's simply a case of opening up the ClearView overlay and testing them out.

It can be a little finicky at first, but once you get into the flow of things, you'll wonder how you lasted so long before implementing gestures on your device. For further features, there's a Pro version available for download on Google Play, which includes a handy Swipe Spots option, perfect for opening apps when in another app.

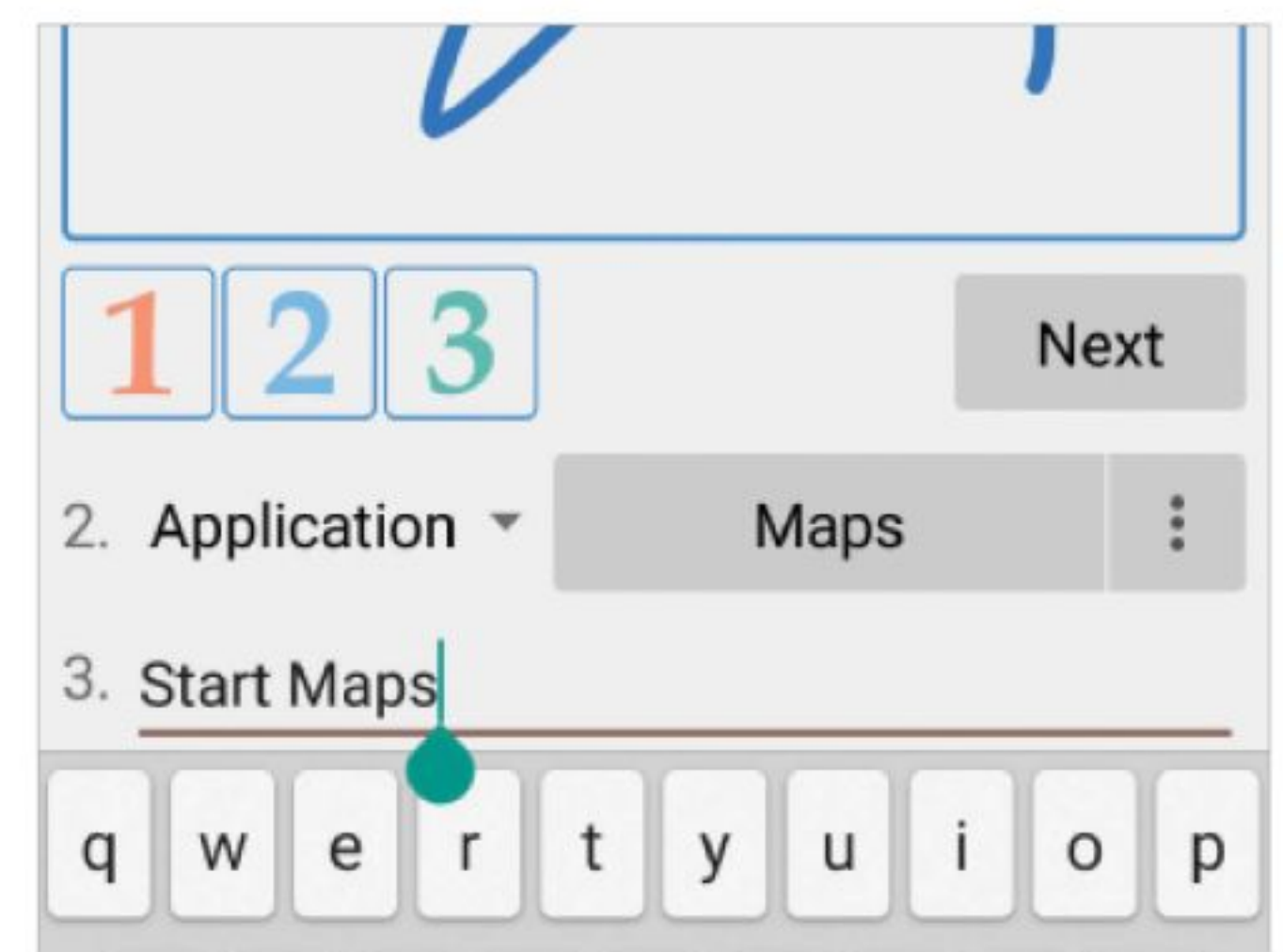
**"You'll wonder how you lasted so long before implementing gestures"**



**1 Start from scratch**  
Open the app and select the Add Gesture option. On the blank panel in front of you, use your finger to trace out the gesture you would like to use. Try and keep it as simple and straightforward as possible, this way it will be much easier for you to replicate later on.



**2 Choose a task**  
Use the drop-down menu on the bottom left of the app to select the kind of task you want to create a gesture for. Once selected, a new menu will appear prompting you to add a few extra details for what you're creating and how you want the gesture to link with it.



**3 Add a name**  
While the app will automatically give your gesture a name, you may want to implement your own. Select the naming option found at the bottom of the screen and use the keyboard to add your own name to your creation. The name will update once you're done.



### 1 All in one Gestures

This app enables you to hide your device's soft keys and instead rely solely on gestures.

### 2 Air Gesture Control

Gently wave your hand over your phone's display to access different settings and apps.

### 3 GMD GestureControl

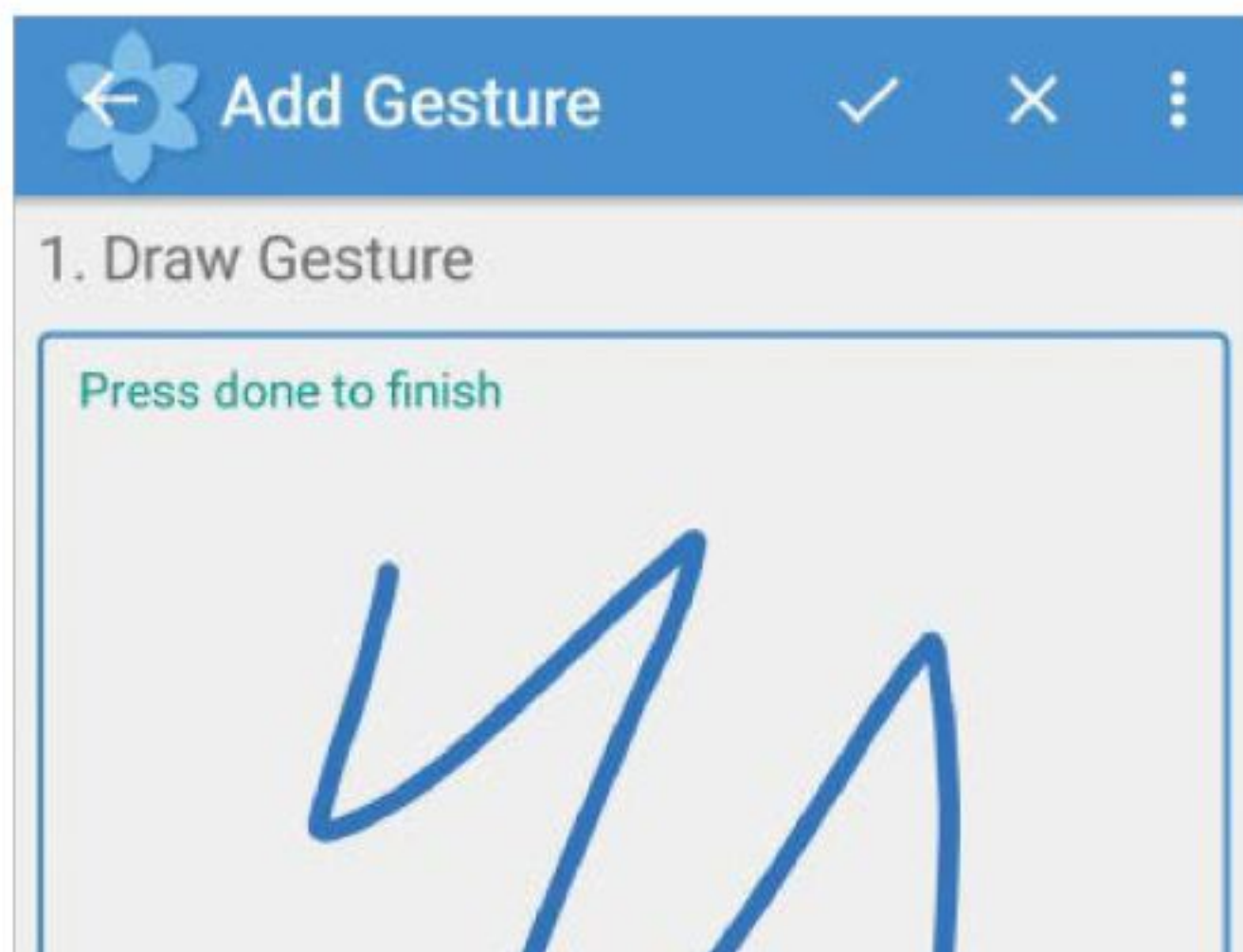
The king of gesture apps that require root, it creates a plethora of simple or convoluted gestures.

### 4 Google Gesture Search

Set up your Android device to perform a full Google search using just one single created gesture.

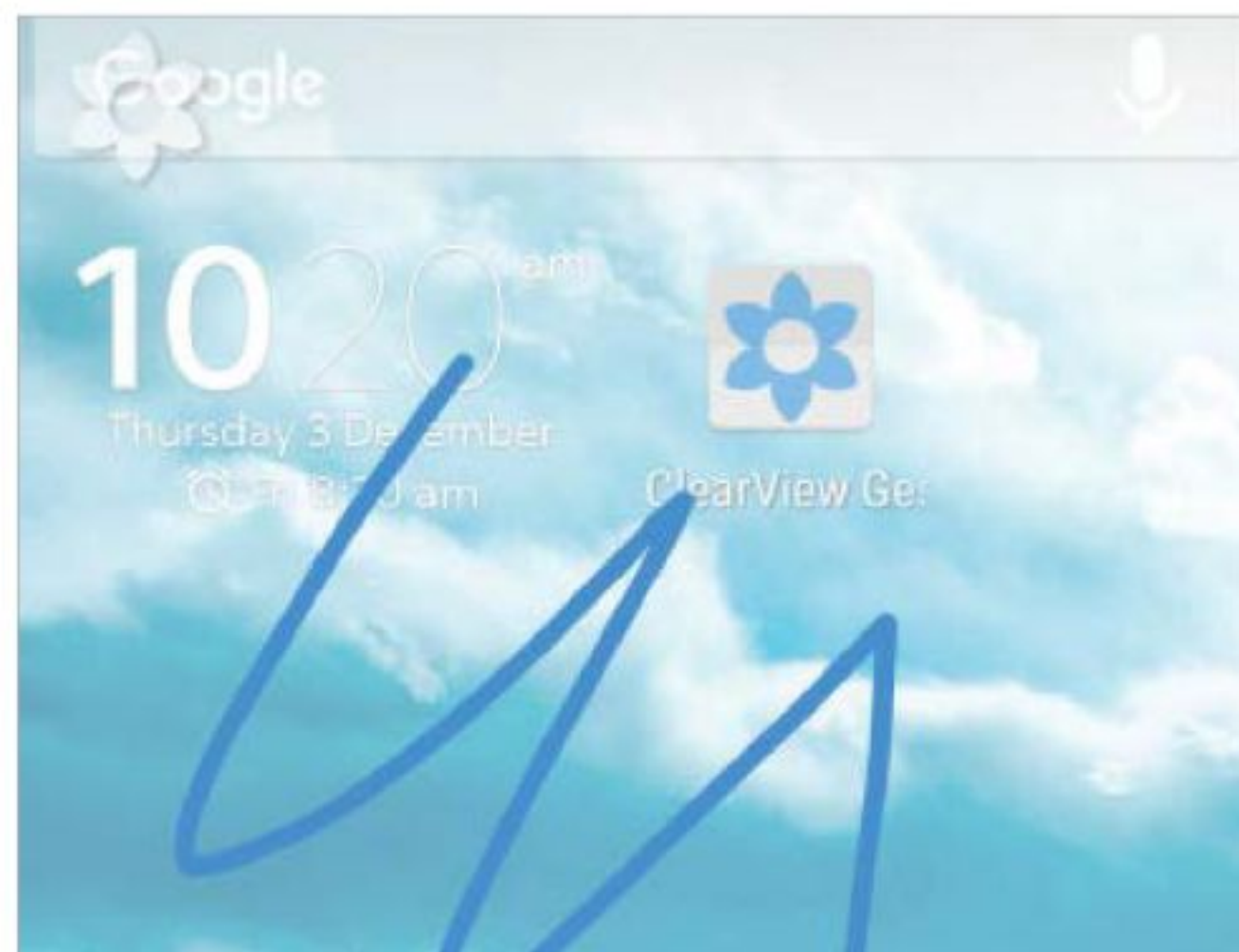
### 5 Gesture Magic

A launcher that is fully controlled by gestures, but worth trying out for a few days.



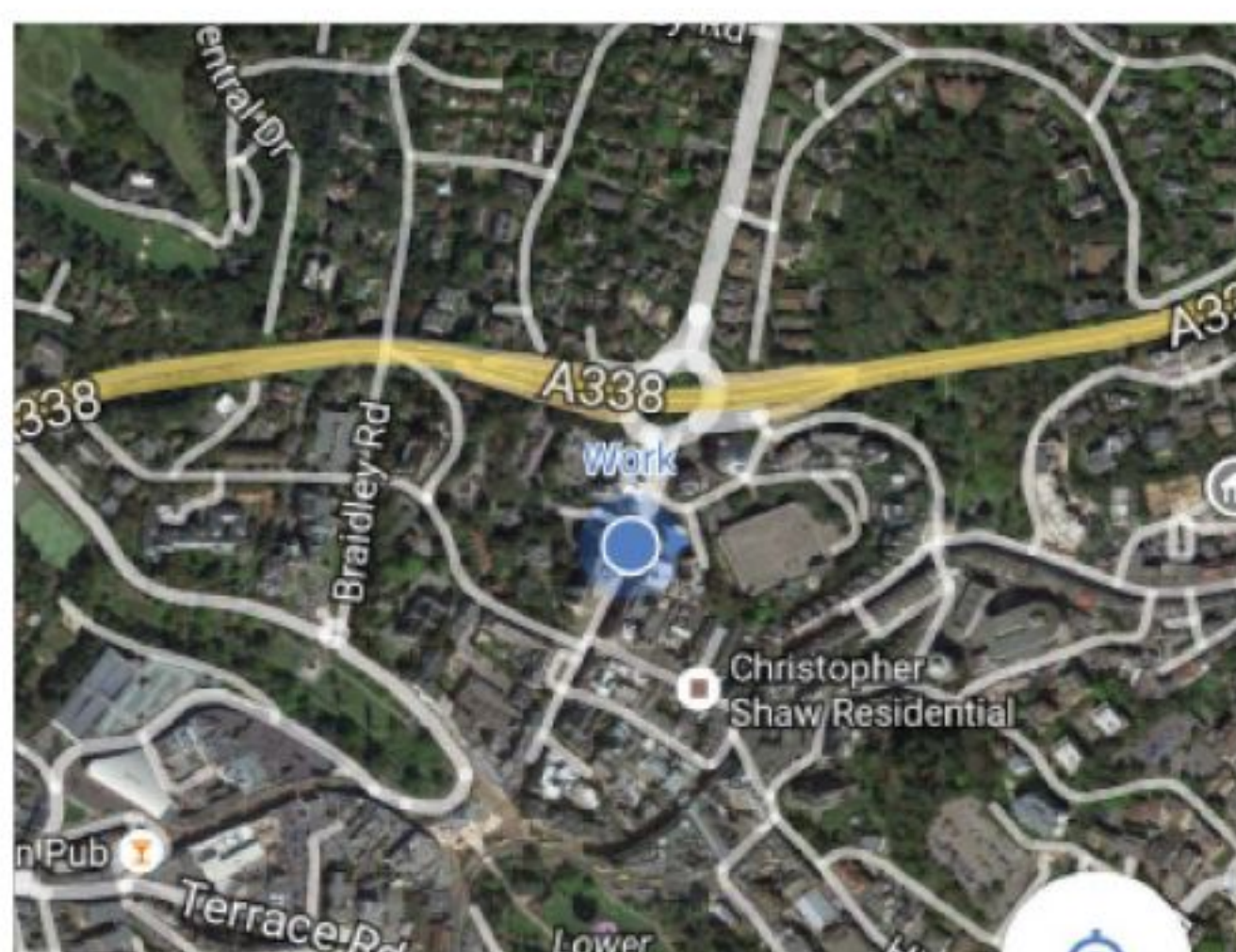
### 4 Rinse and repeat

Press on the next panel on the right-hand side of the app to continue with your gesture. You'll need to re-enter the gesture twice more before being able to save it. Once completed, press on the tick icon to finalise and save the gesture to your library.



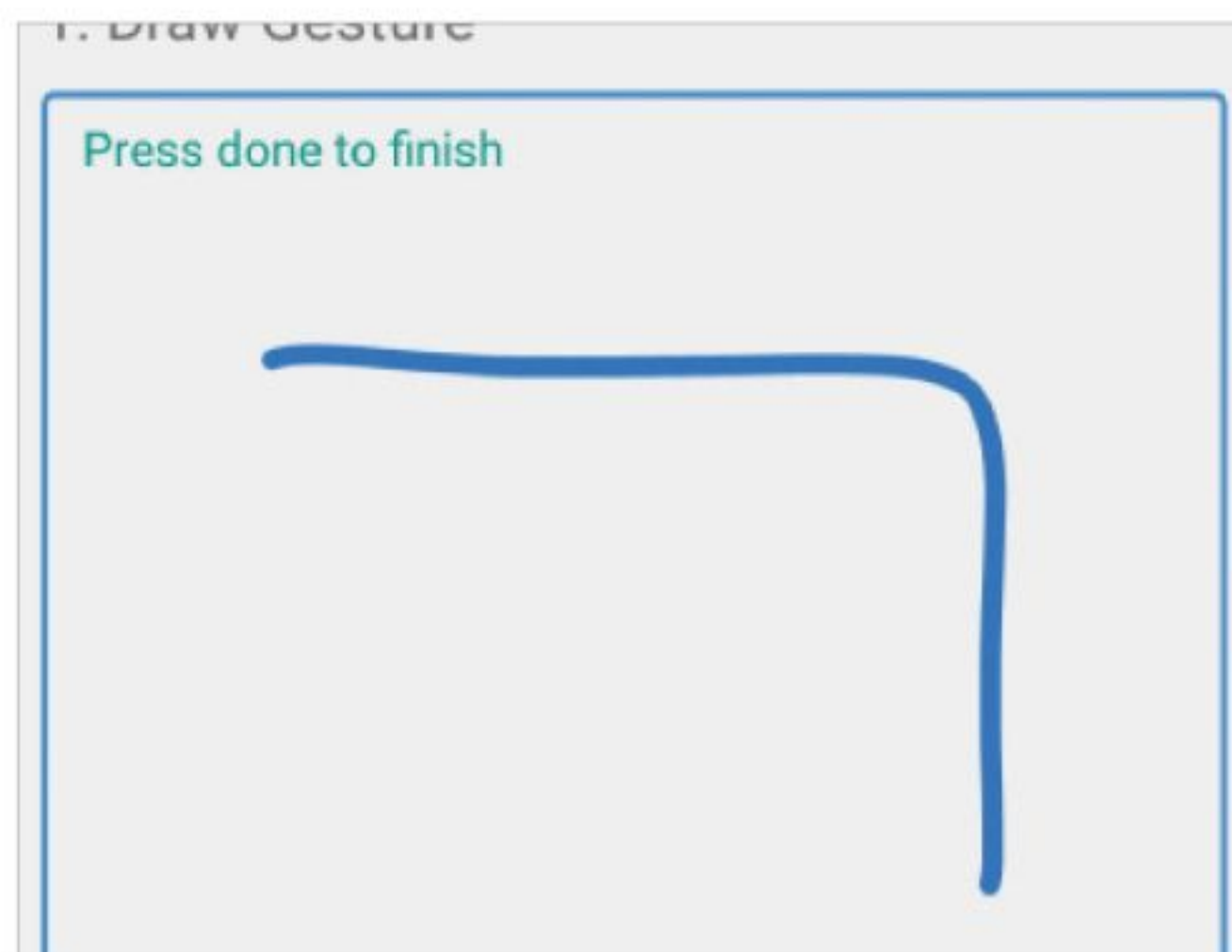
### 5 Open the overlay

To start using your gestures, you'll need to open the ClearView overlay. Press on the flower symbol that will be present on the top left of your display to do this. Now use your finger to sketch out the gesture you want to try out. Your phone should vibrate if you entered it correctly.



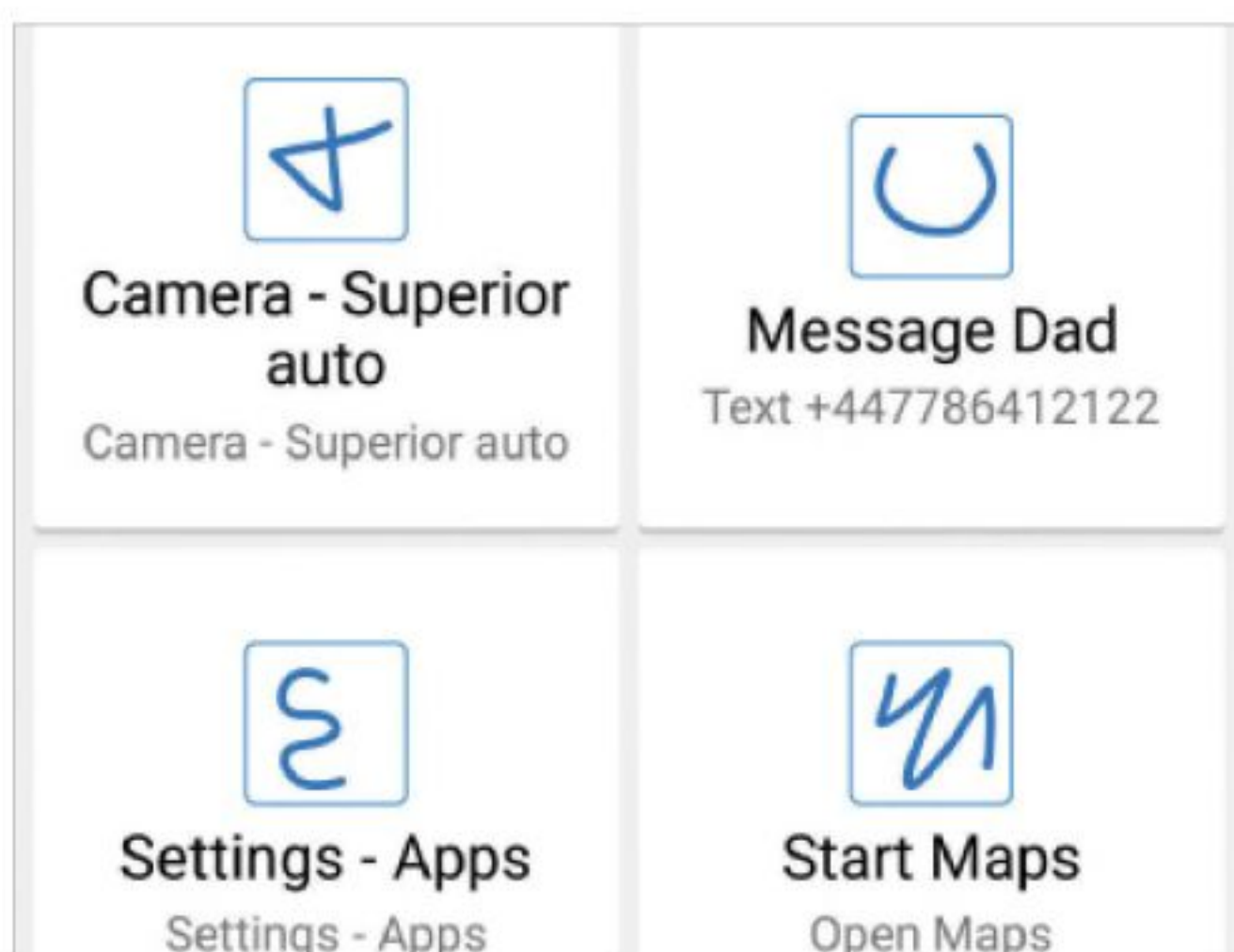
### 6 Did it work?

As well as receiving a vibration if entered correctly, a small notification should appear at the bottom of the display indicating that it is performing the task. In a few seconds you should find that the connected app, shortcut or setting opens up ready for you to use.



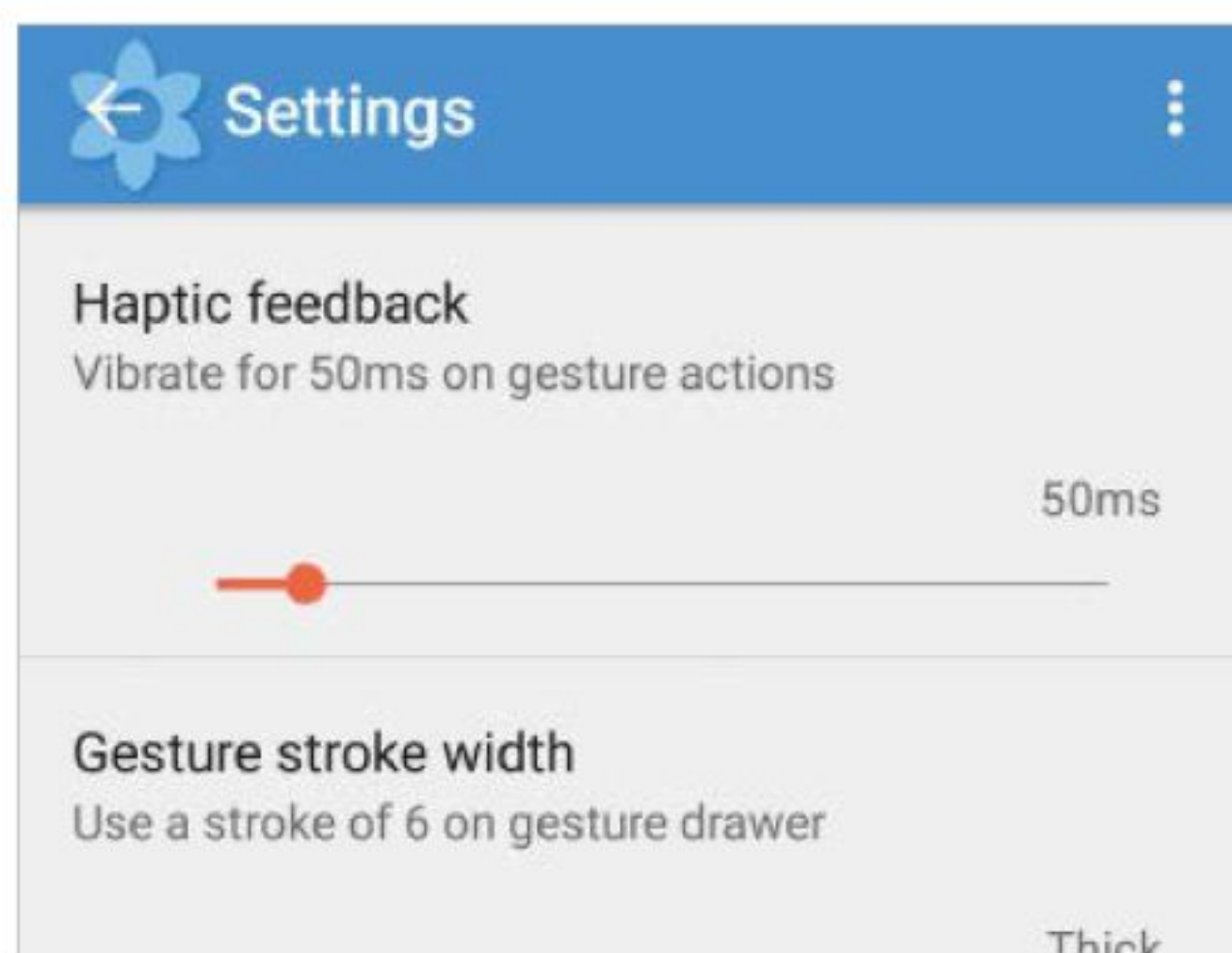
### 7 Add further gestures

Once you have tested out your first gesture, reopen the ClearView overlay and select the Add Gesture option found at the bottom of your display. You will want to repeat this process for adding any subsequent gestures into your library of creations.



### 8 View the library

After adding a second gesture, you can access the whole library. Here all your creations will be listed for you to take a closer look at. By long pressing on any of them, you can choose to perform an edit or simply remove them from your list of gestures.



### 9 Manage settings

Press on the Settings icon from within the app to explore some extra options. Here you can customise how the overlay looks, as well as set the opacity level for it. We recommend also changing the brush thickness, as a thinner brush makes entering gestures easier.

## faq

Ask your own question online at [littlegreenrobot.co.uk](http://littlegreenrobot.co.uk)

### Does my phone need to be rooted?

While plenty of gesture-based apps require root access, this cannot be said about the ClearView Gestures app. All it takes is to own and use a phone that runs at least Android 4.1 or above, and has enough storage space to store a library of gestures.

### Can I relocate the overlay icon?

The overlay icon is placed in the top-right corner by default. While it's needed for the app, its default position can impact how other phone functions work. However, through the settings of the app, it's easy enough to relocate it into a more useable position.

## Need help?

Got a problem with your Android phone or tablet? Get in touch with us...

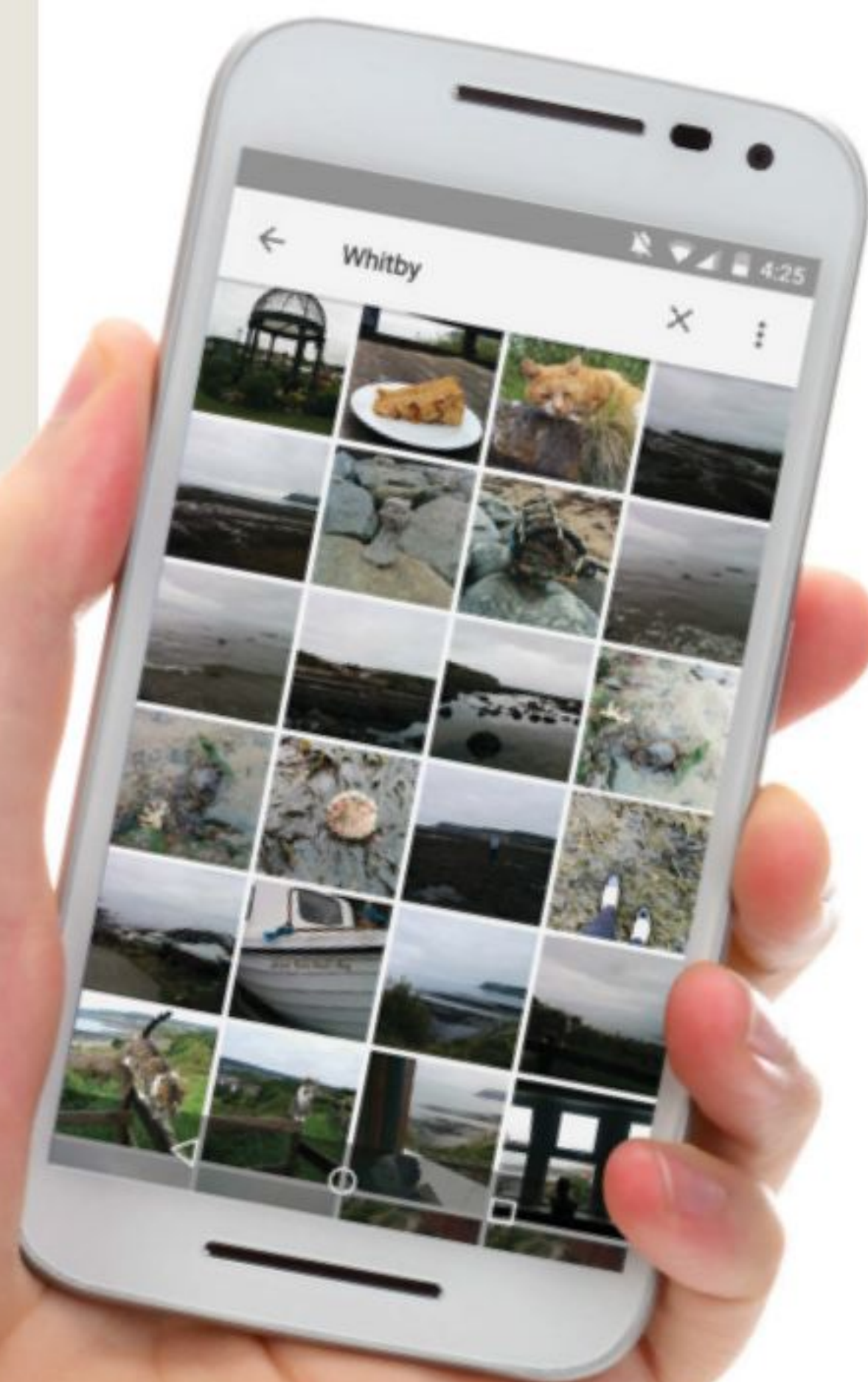
**facebook**  
/littlegreenrobot  
Get help from our Facebook community

**twitter**  
@lgrobot  
Follow us to send your questions and thoughts

**email**  
[qa@littlegreenrobot.co.uk](mailto:qa@littlegreenrobot.co.uk)  
Send your questions for our team of experts to tackle



App used >> Google Photos version 1.8 Works with >> Android 4.0 and up



## Explore Google Photos' brand new features

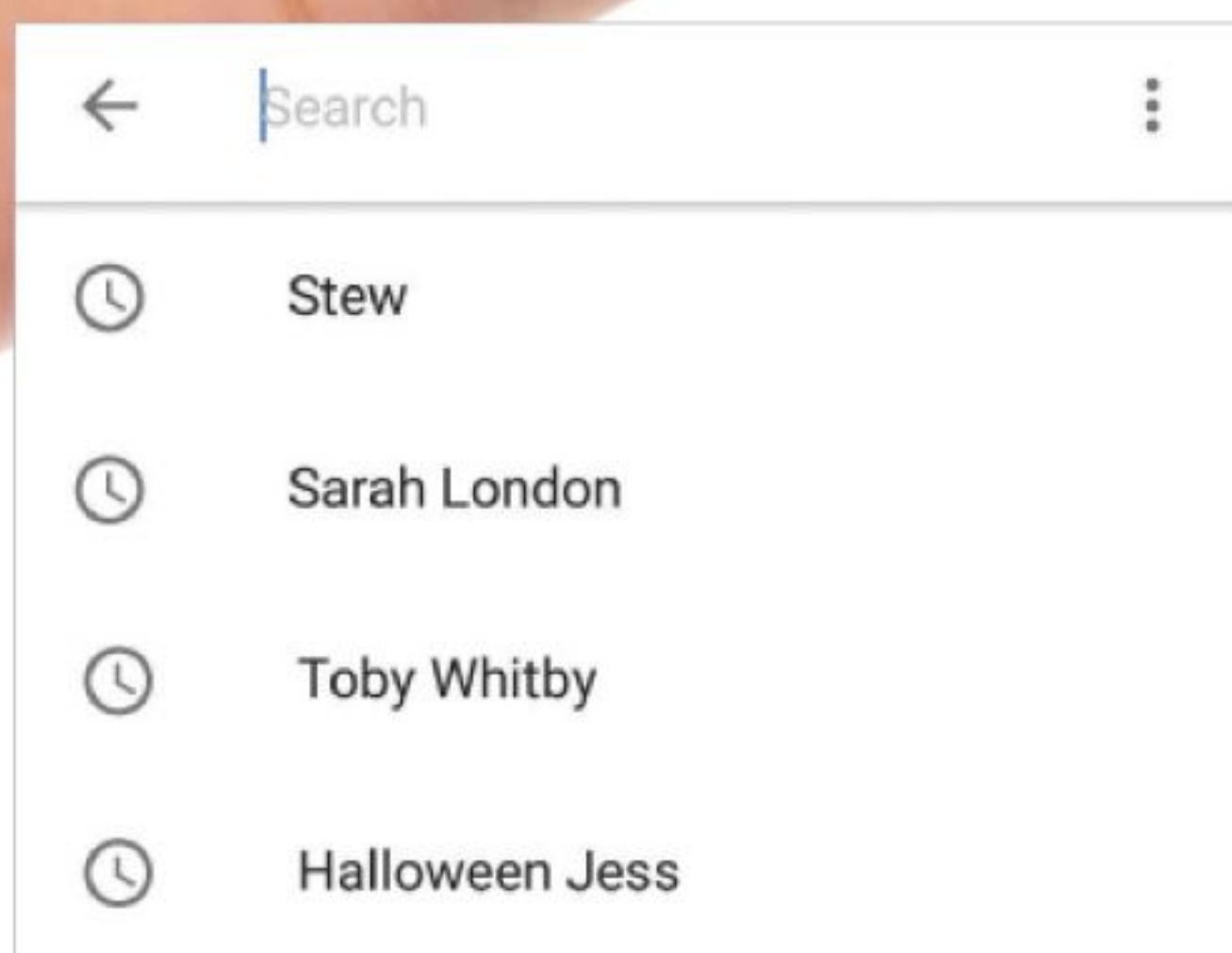
Get acquainted with the latest features, including how to hide anyone from your Photos gallery

Google has recently announced some new features for its dedicated gallery and photo-organising app, including facial recognition that automatically organises your photos based on who is in them.

This new feature means that you can now search your entire media collection in your app for photos of a specific person. You can even create very

specific searches by combining people's names with other factors, such as locations.

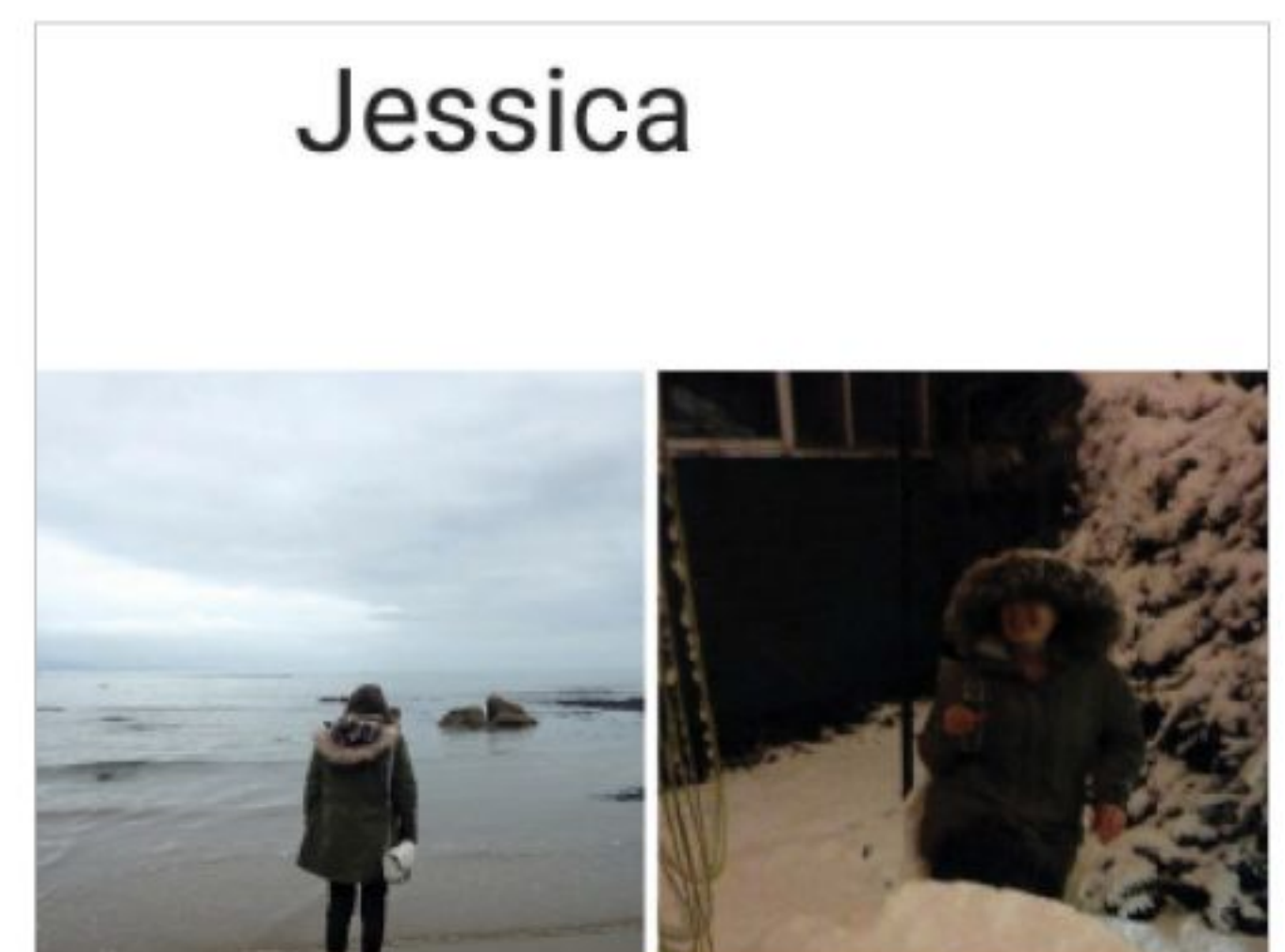
The latest version of Photos lets you tweak this recognition by attaching your own labels to photos, which is handy if Google labels someone incorrectly or if you want to use a nickname. This tutorial explores Photos' new facial-recognition features plus some other handy features.



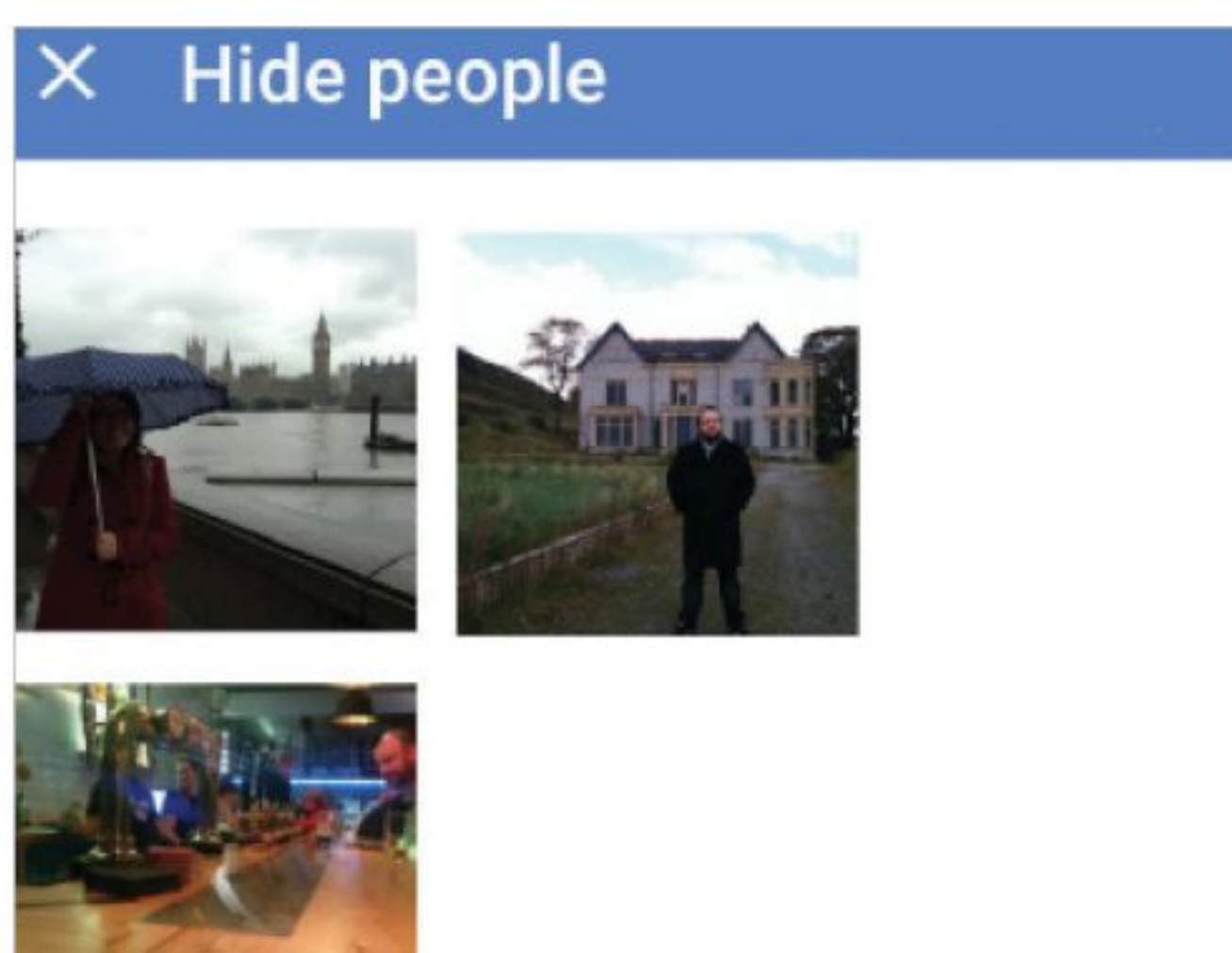
**1 More specific searches**  
You can create labels for the people in your photos. This enables you to perform specific searches, for example if you had a day trip with a friend, you can find photos that feature your friend in this location by searching for it.



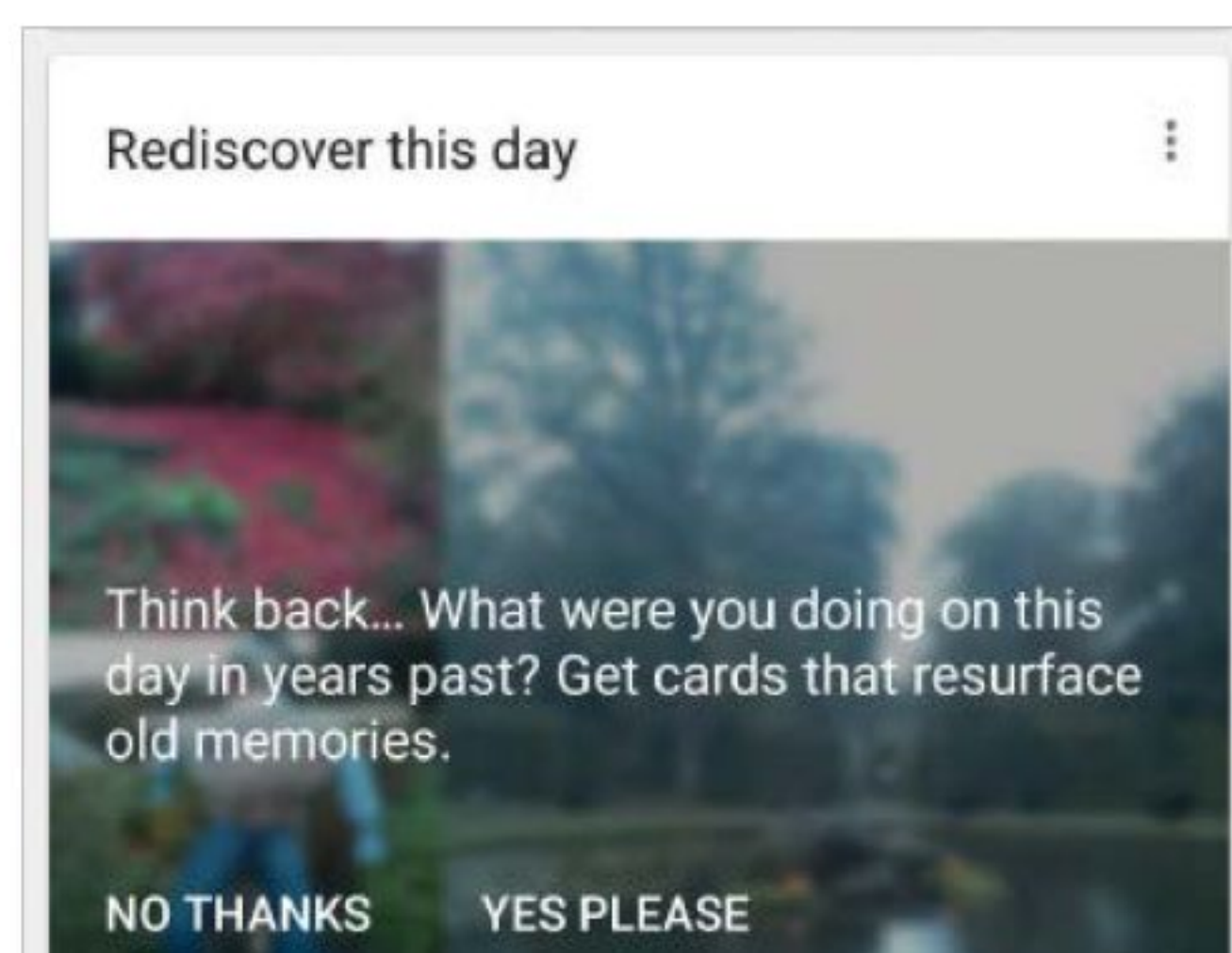
**2 Check facial-recognition**  
This isn't currently available worldwide so to check whether it's in your version of Photos, launch the app and tap the blue magnifying glass. You'll then see all the different folders the app has created for your photos – look for a People section.



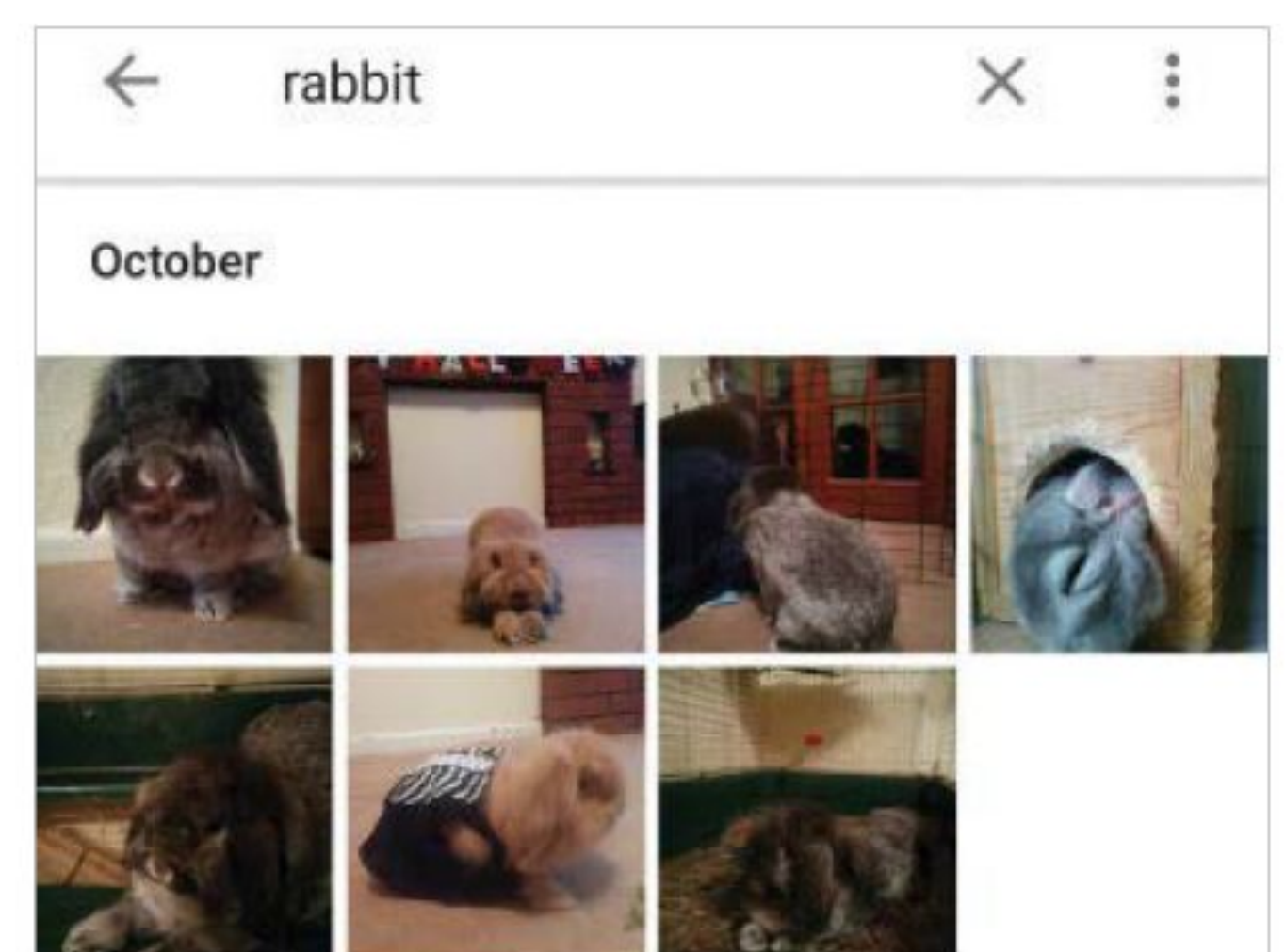
**3 Create your label**  
If you do find a People section, it will have folders for all the different people in your photos. To create a label, open a folder, select the Who is this field and enter the label. Now you can incorporate this label in your searches.



**4 Banish people**  
You can hide all photos that feature a particular person (handy if you've had a falling out!). To hide a person, go to the People section and long-press on the folder containing the person you want to hide. Select Hide from the toolbar.



**5 Reminisce and rediscover**  
When you hide someone, they won't appear in the Rediscover this day card. If you haven't seen this feature, open the Assistant page and scroll down. You should see a Rediscover card asking whether you want to opt into this service.



**6 Pinch to zoom**  
The latest version also introduces pinch to zoom. To use this, perform a search. When the results appear, pinch with an inwards motion – the app will zoom out so you can see more of the results. To zoom in, pinch outwards.



Apps used » G Data Secure Chat Works with » Android 2.3 and up

# Encrypt messages with Secure Chat

Make sure your private messages remain private

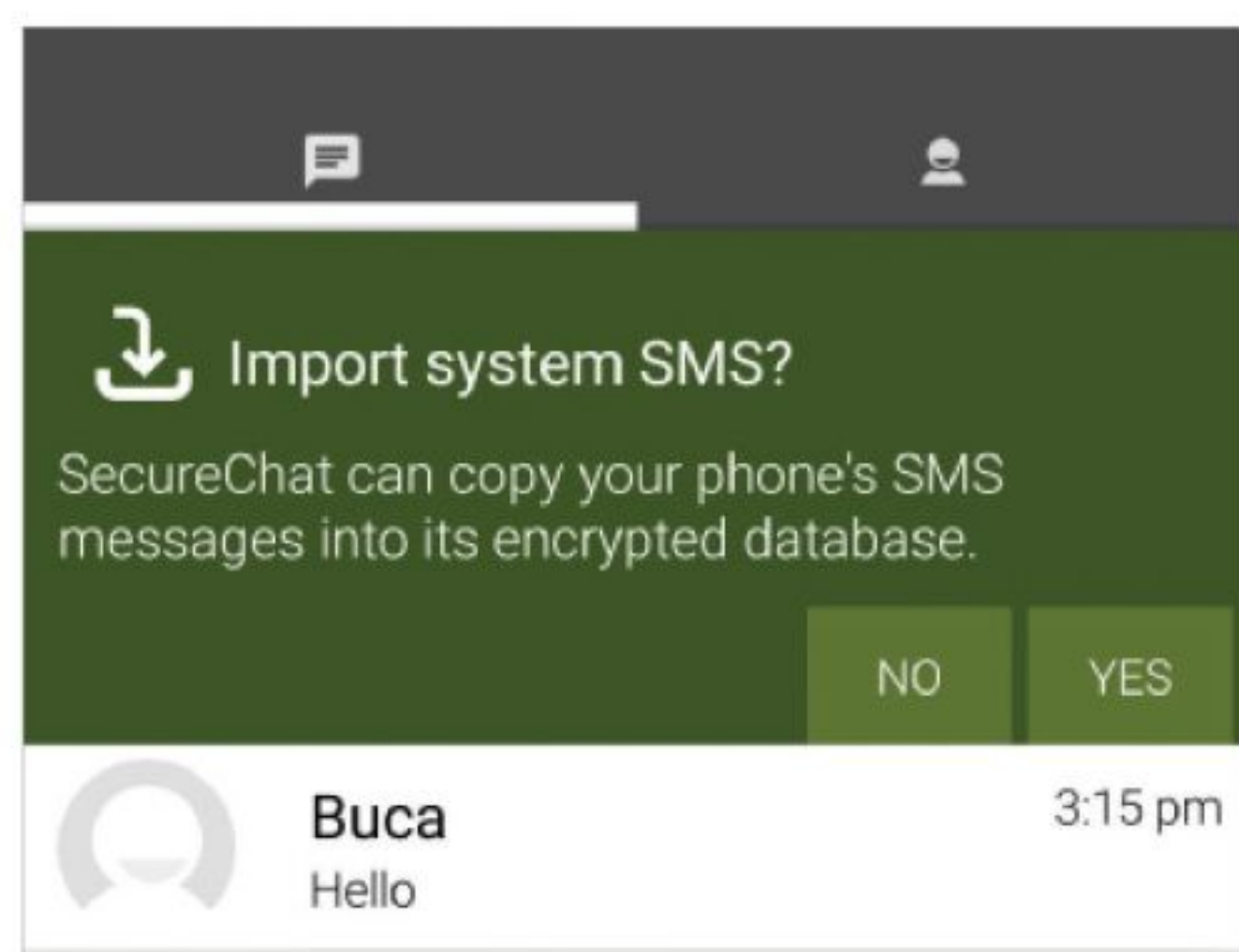
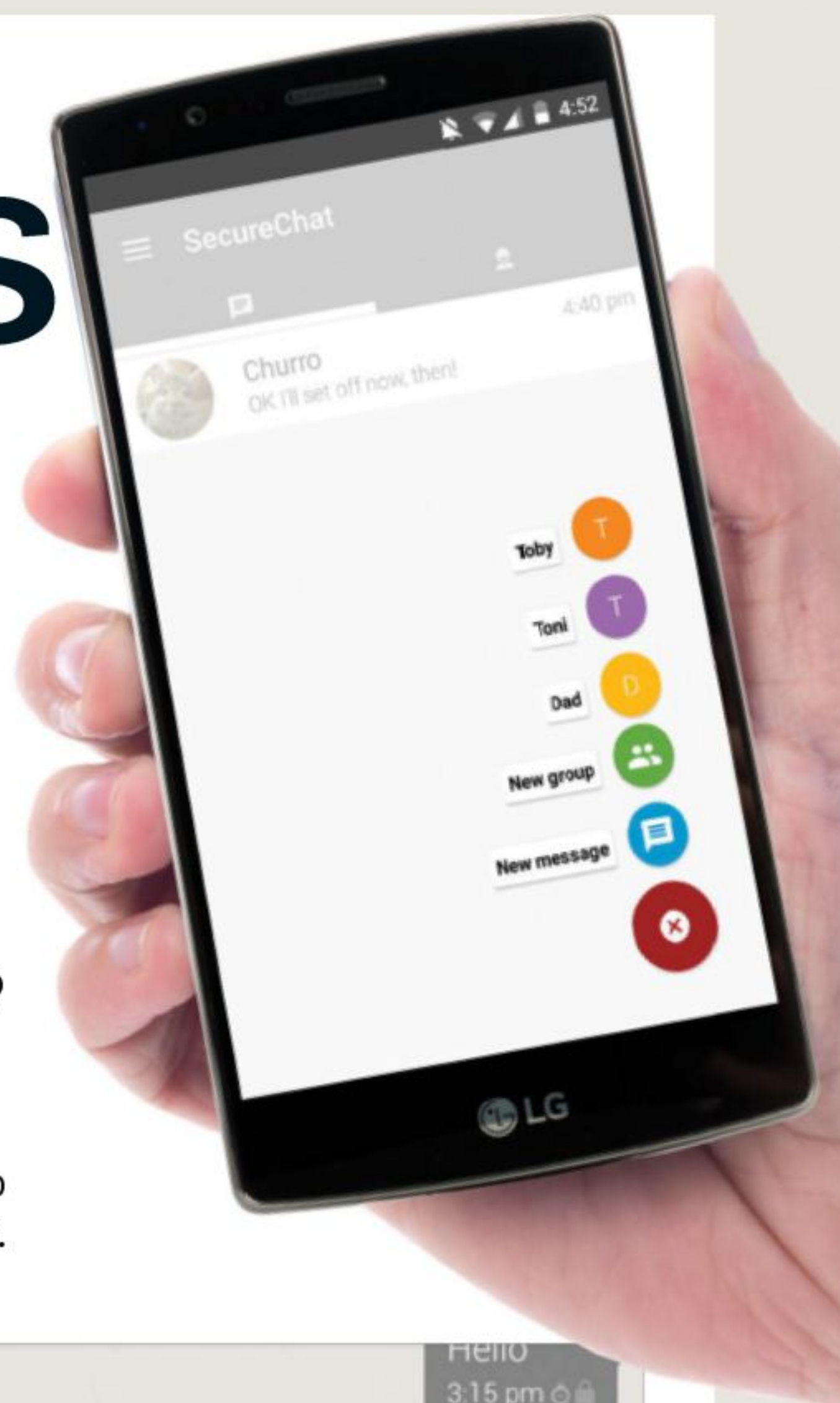
With many of us storing more personal information on our smartphones than ever before, privacy is a big concern.

When it comes to messages there are lots of ways people can eavesdrop on your conversations, from surveillance software through to someone physically picking up your phone and reading your texts.

G Data Secure Chat is just one of many SMS encryption apps currently on the market, but it does include some useful extra features such as self-destructing messages that come in handy for particularly sensitive information.

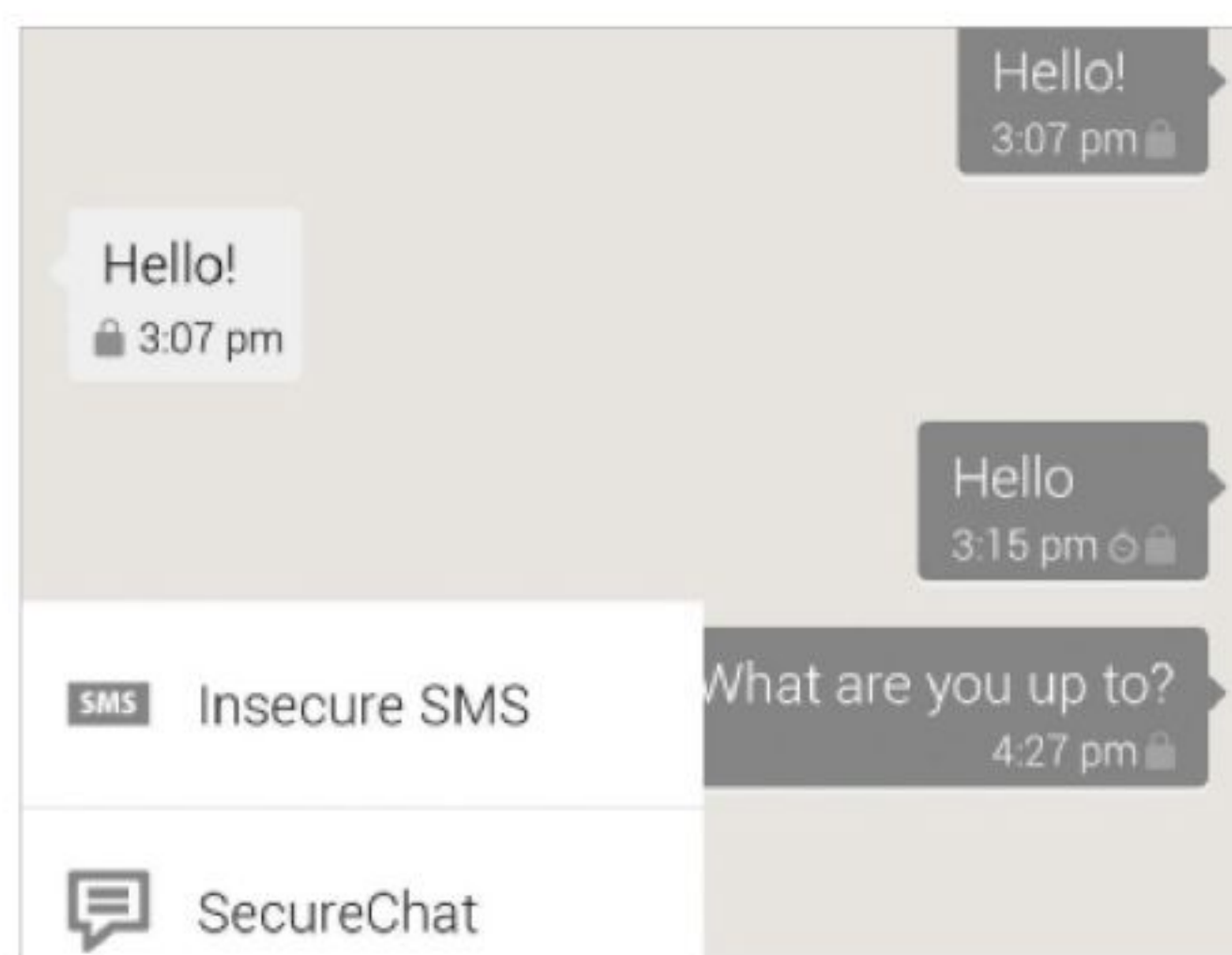
The downside is that although you can use the app to message anyone, you can only send encrypted messages to people who are also using Secure Chat.

Download the free G Data Secure Chat app from Google Play. When you launch the app, it'll ask you to register by entering your country and phone number.



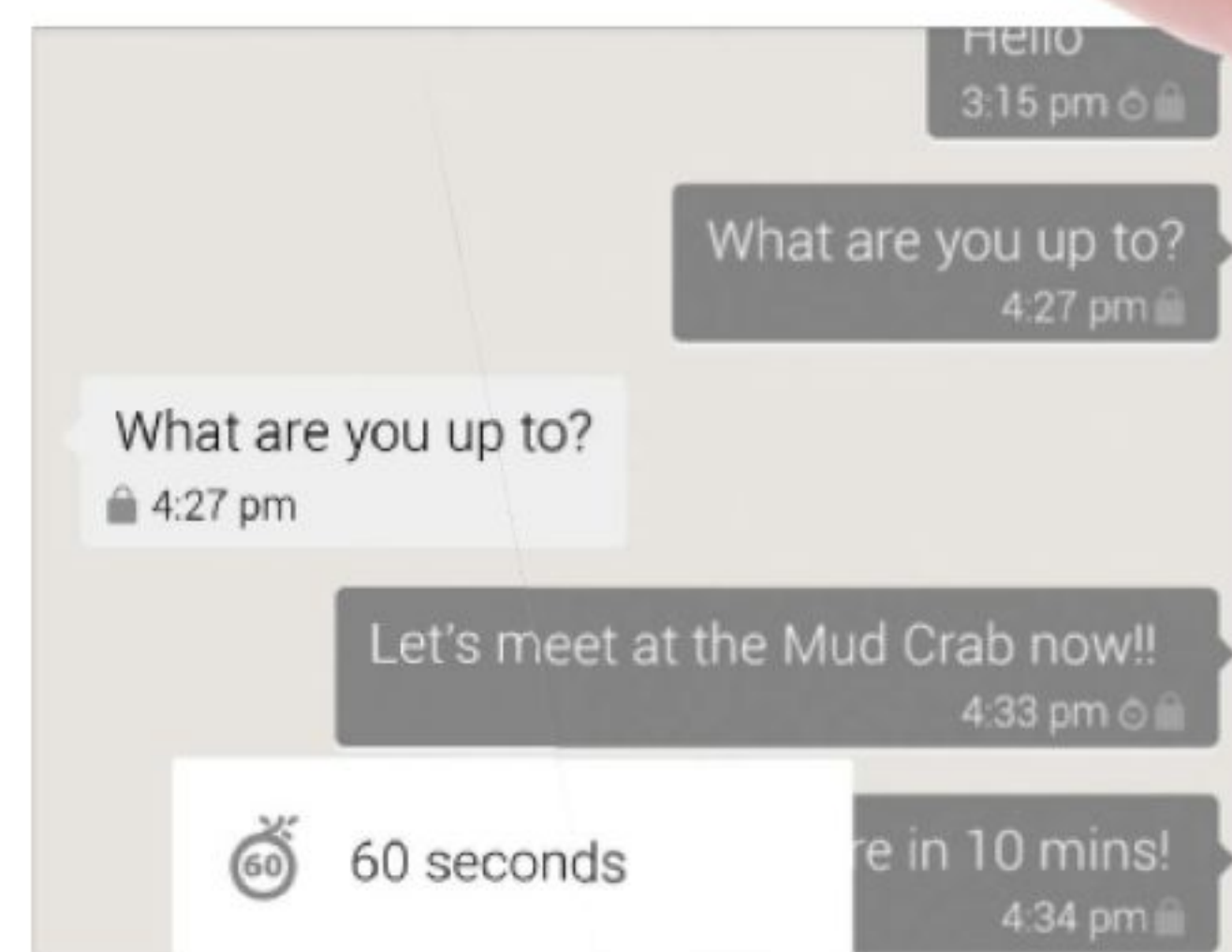
## 1 Choose a contact

After registering you'll be taken to the main screen. To send a secured SMS, open the Contacts tab and select a person. You can type your message as normal, but before hitting Send there are a few extra features to explore.



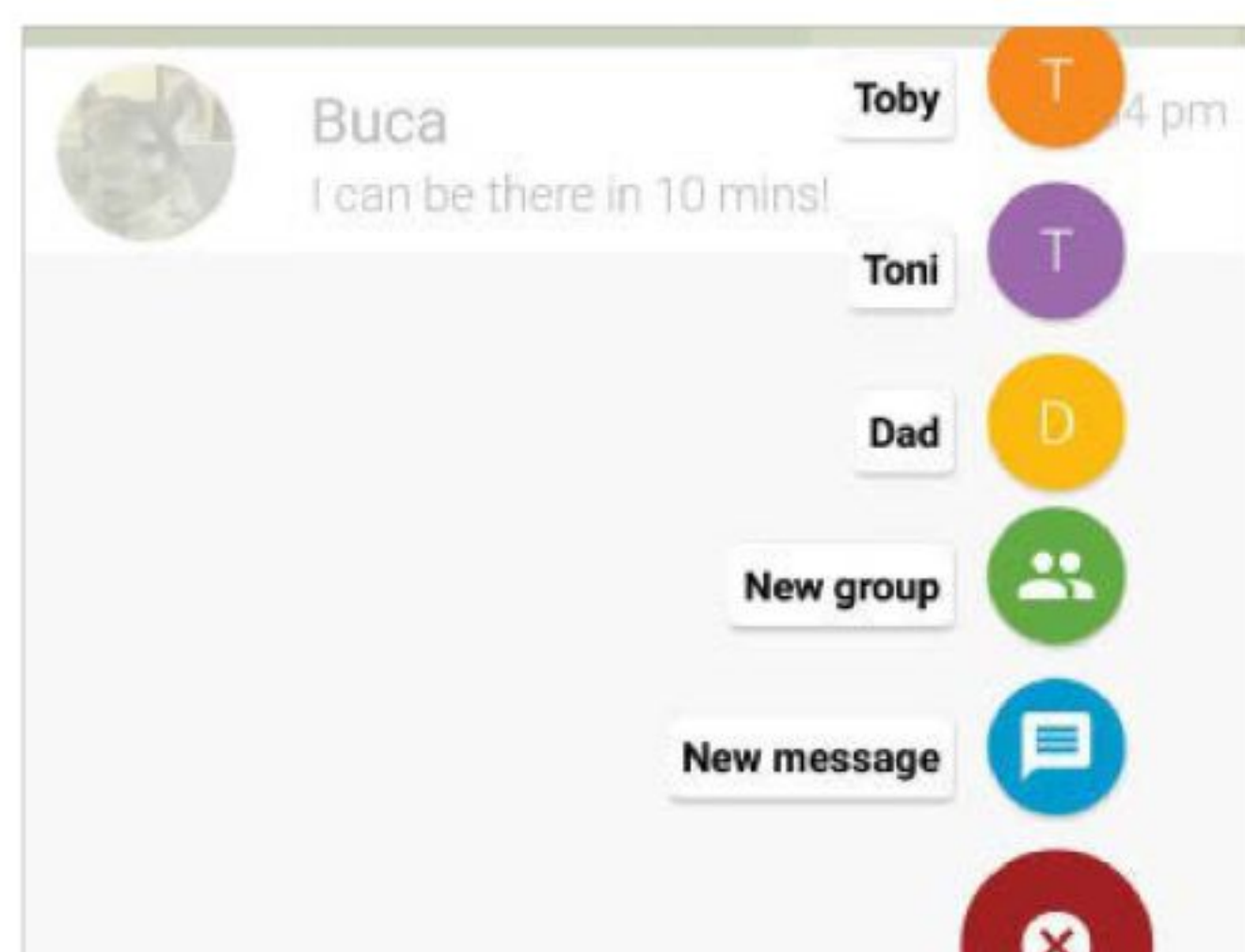
## 2 Start chatting securely

Tap the speech bubble icon then toggle between sending as an Insecure SMS or a Secure Chat message. If your contact doesn't have Secure Chat, you'll see an Invite option. Tapping Invite will send them a link to download it.



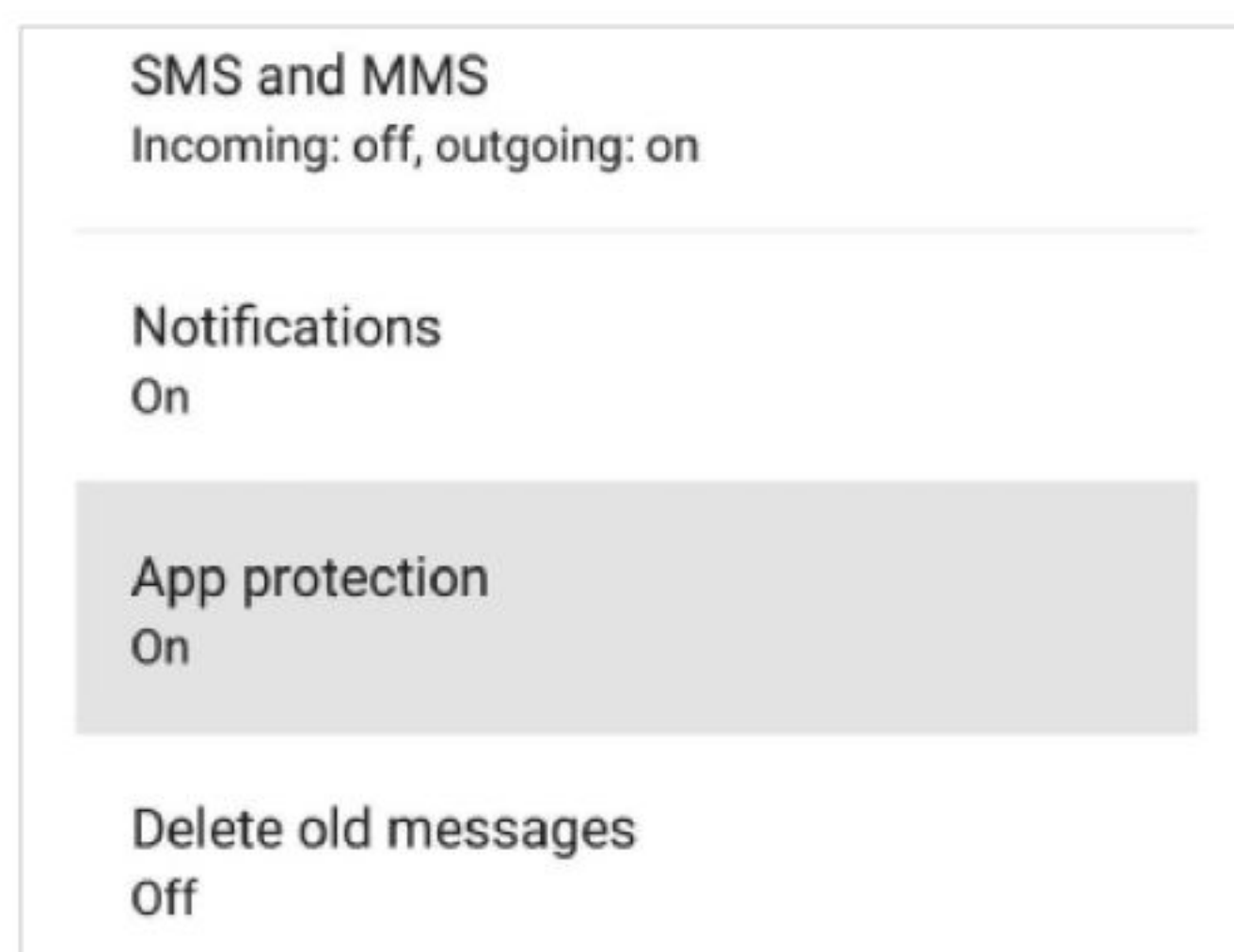
## 3 Self destruct

You can set a message to self-destruct by tapping the clock icon and setting a countdown. When the user receives this SMS, they'll get a warning that the attached message will self-destruct after a set period of time.



## 4 Create secure groups

If you have multiple contacts who use Secure Chat, you can create secure group chats. On the main screen, tap the red + icon and select New Group. Give your group a name then tap the Add member field and enter your contacts' names.



## 5 Add a passphrase

You can lock the app with a passphrase. On the main screen tap the menu icon and select Settings>App protection. Tap Enable passphrase and type when prompted. By default this is only applied when you manually lock the app.



## 6 Manually lock

To lock Secure Chat, open the menu and select Lock. Alternatively, you can tell the app to lock automatically after a set time by returning to the App protection screen and tapping Timeout passphrase. Tap Timeout interval and enter a time.



**Apps used** » Palabre Feedly RSS Reader News **Works with** » Varies with device

# Pick what you want to read

Use this free app to get a customised stream of news direct to your device

**Palabre** is a handy app that lets you combine a number of different news and information feeds into one easy to digest stream. It's just been updated to version 2.0 and has got some really cool new features. The app looks great and while it isn't perfect, the new additions make it an even more attractive proposition than before. If you've stopped using RSS feeds then this is a pretty decent way to get back into them, while blending in your social media too. We're going to walk you through how to get the app set up and show you some hints and tips to make sure you're getting the best tailored news experience possible. It's not a particularly complicated process, but there are a few tricky bits that make it fiddlier than it really should be. But don't fret; we've got your back! All you'll need to get this running is your phone, an internet connection and a few minutes of your time.

“The app looks great and while it isn't perfect, the new additions make it an even more attractive proposition”

## Organise your news

The three buttons along the top of the screen let you search your feeds for content, mark everything as read, refresh your feed, switch the order or set up new content notifications. Tapping the button on the left will access the main menu

## News categories

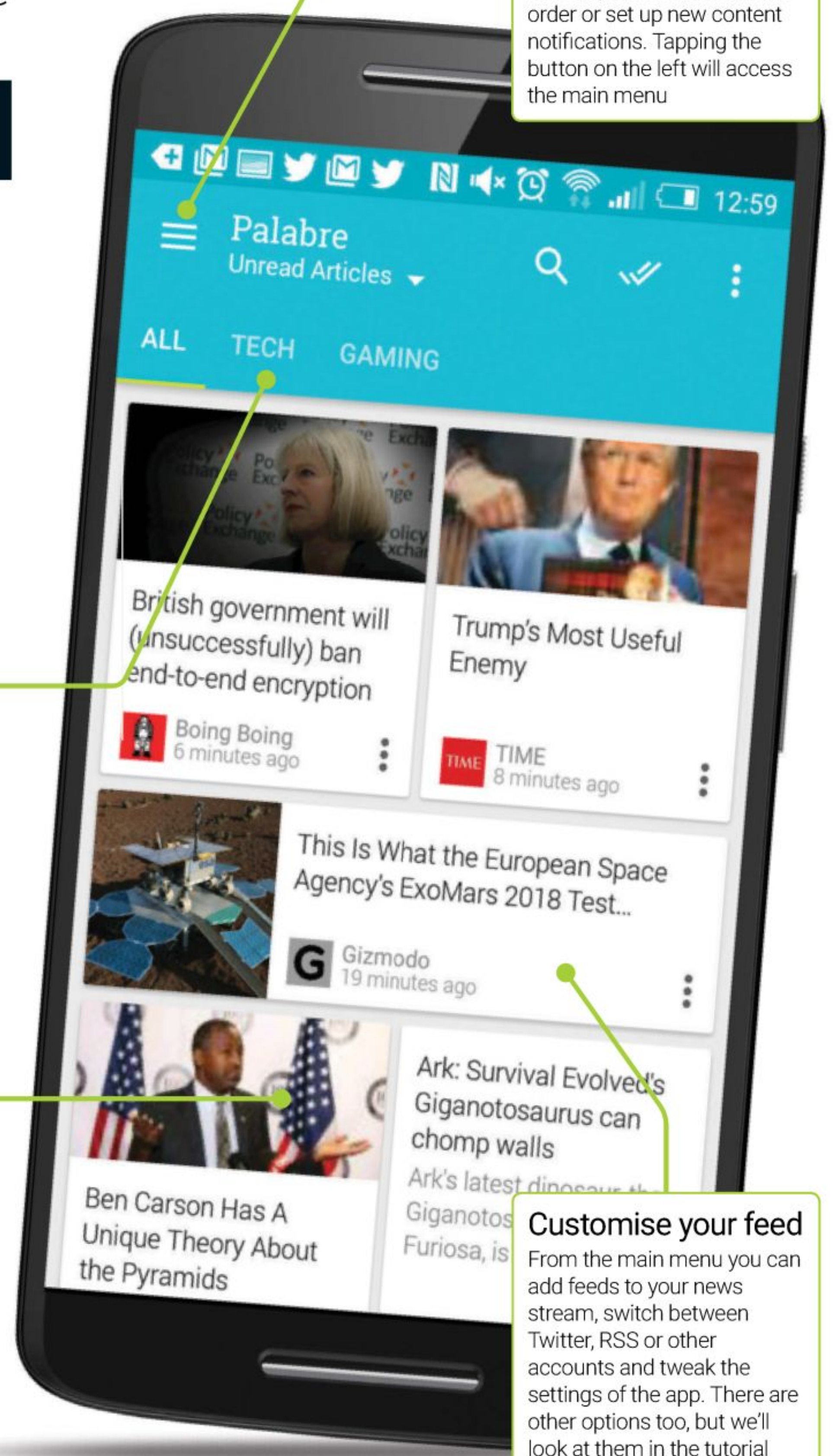
This is the main screen of the app. Along the top you will see different categories for your news feed; tap each of these in turn to jump between them. The filters at the top let you change whether you can see unread stories

## Easy navigation

The stories are all laid out in a grid. You can swipe through to find other stories and tap the menu box to get options that let you save a story, mark as read or even mark other unwanted stories as read

## Customise your feed

From the main menu you can add feeds to your news stream, switch between Twitter, RSS or other accounts and tweak the settings of the app. There are other options too, but we'll look at them in the tutorial



## Available Providers



### Palabre (RSS)

Simple feed reader allowing you to add and organize your news sources.

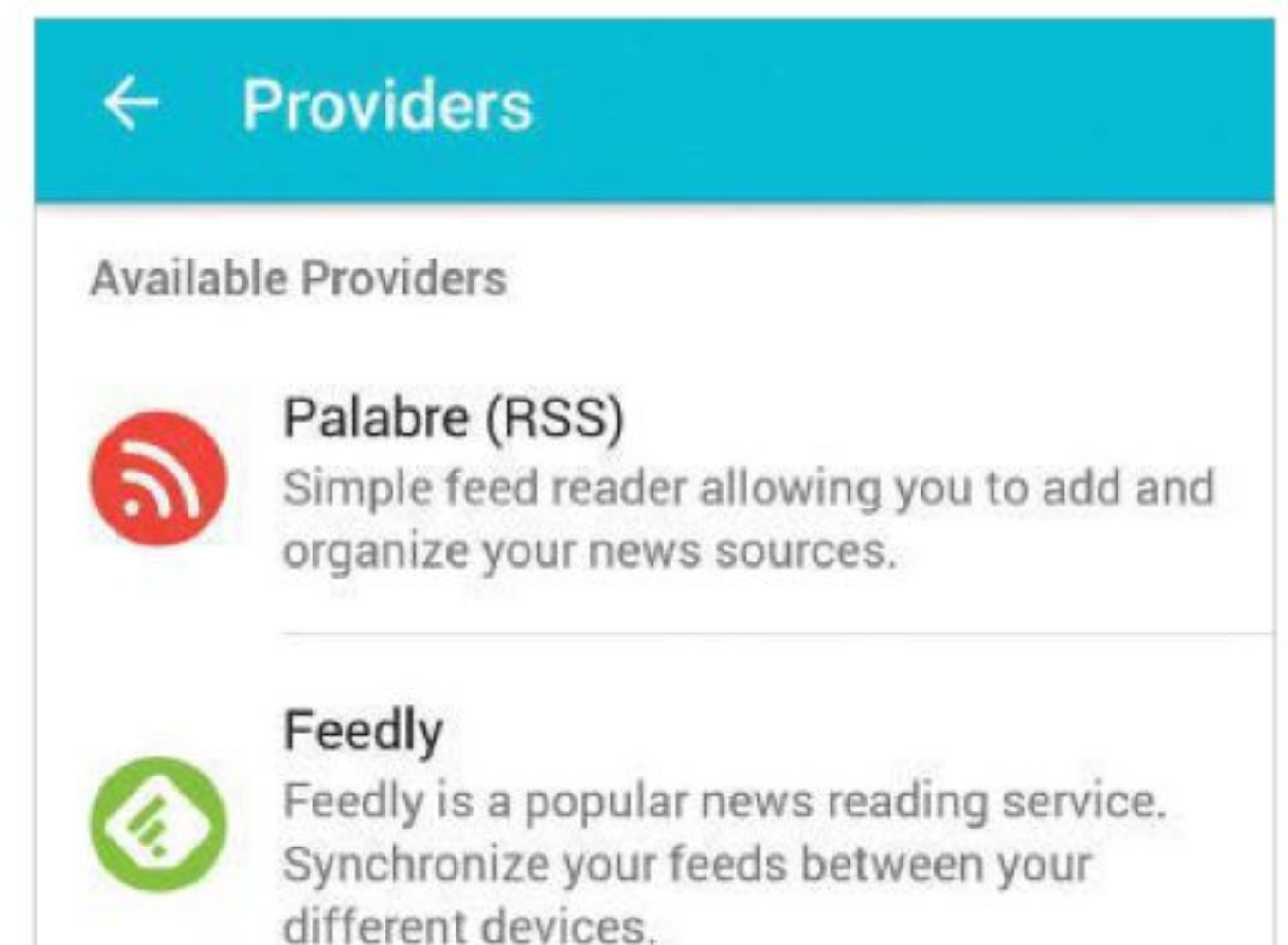
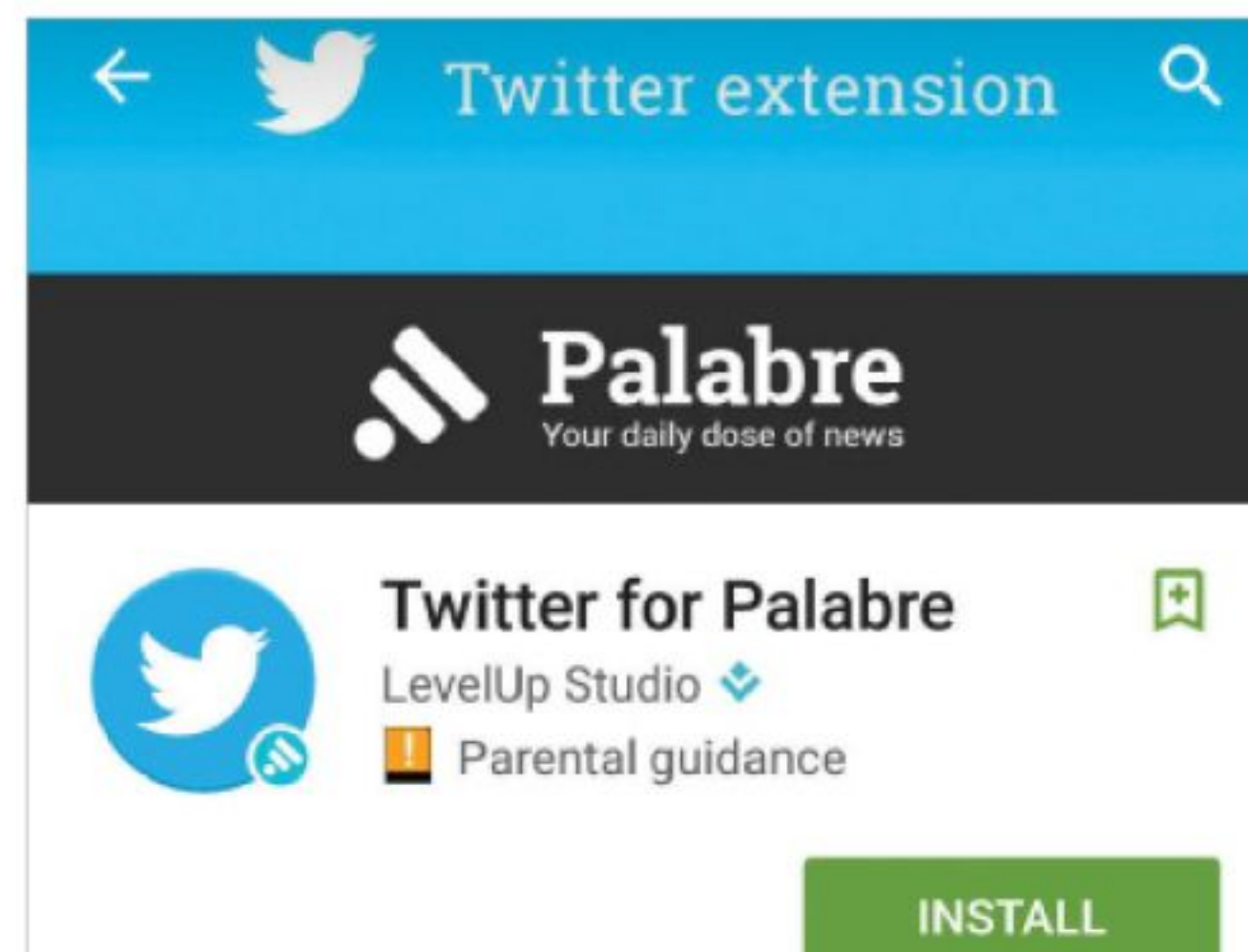


### Feedly

Feedly is a popular news reading service. Synchronize your feeds between your different devices.

Featured providers  
Add more content

MORE



## 1 Download the app

Grab the app from the Play store and install it on your device. It's free and shouldn't take too long to download. Once it's done, you will need to choose which feeds you want to add to your own customised news stream. Some of them require an extra download.

## 2 Make your choice

For example, Twitter requires you to download an extension to the app. It's a tiny download and shouldn't take too long to grab, but it is slightly annoying that the connectivity isn't included in the app itself. Once it has installed, sign in with your Twitter account.

## 3 Pick and choose

Any extra modules you install will pop up in the list of available feeds. When you choose one you will be given a number of different options about the sort of content you would like to see from that source. You can edit what you see later on too, so this doesn't have to be your final pick.



### 1 Join the beta

On the other options menu you can join the Google+ beta community for the app.

### 2 Refresh on launch

On the first page of the Settings menu you can choose to refresh your news feed on launch.

### 3 Find saved articles

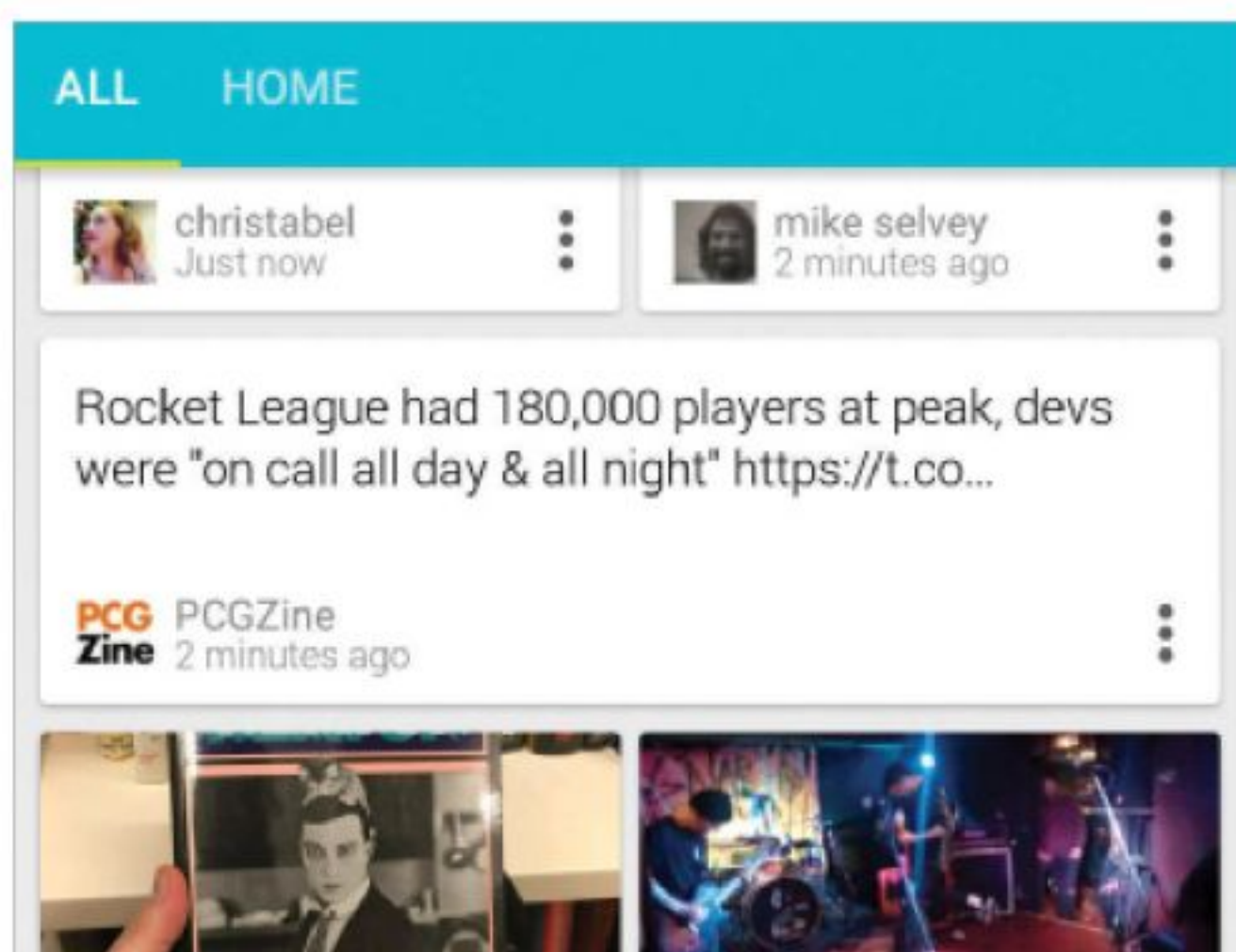
Your saved articles are on the main page in the drop-down menu found below the logo.

### 4 Move it around

You can move feeds into different sections in the manage sources menu by tapping the three dots.

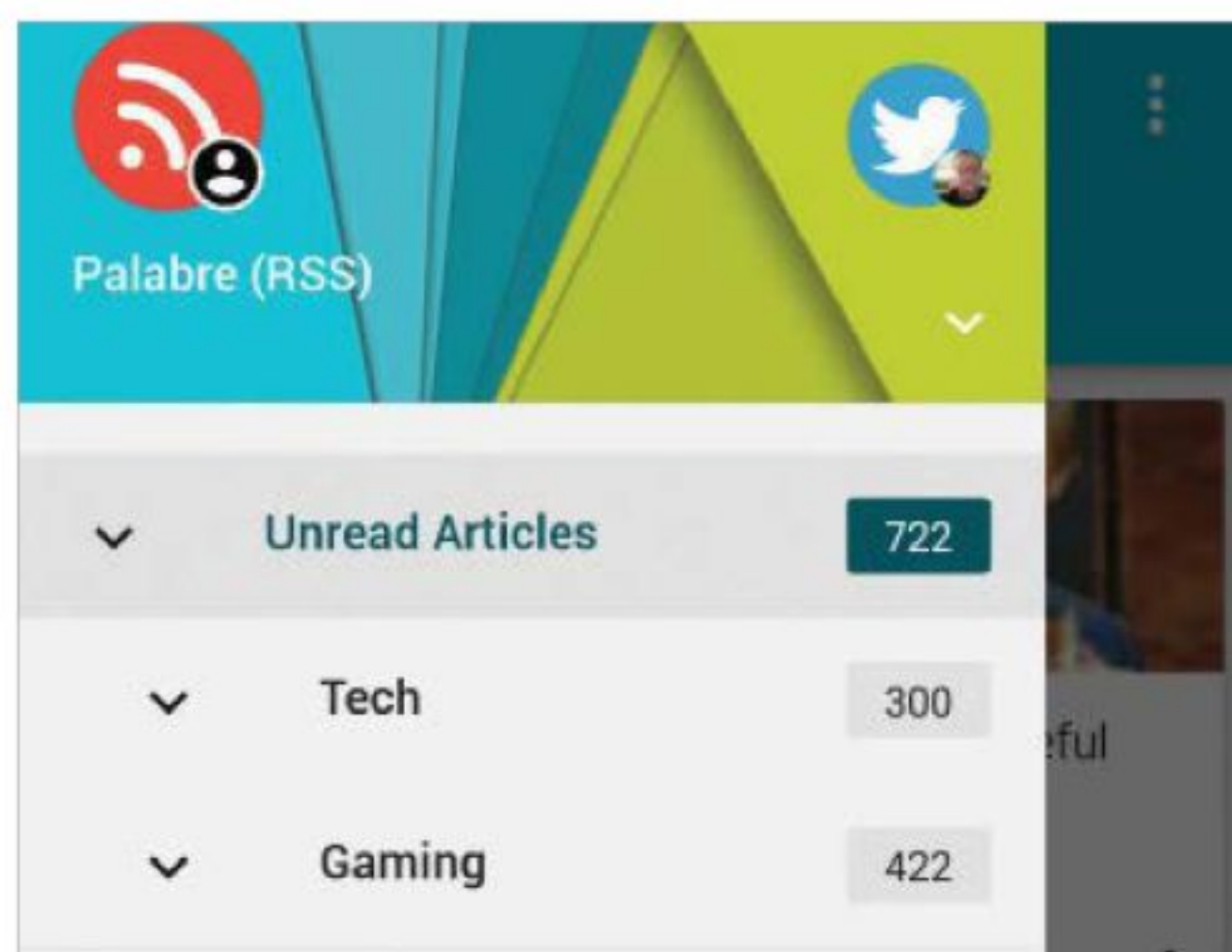
### 5 Share what you have

You can share articles when you're reading them by tapping the big green share button.



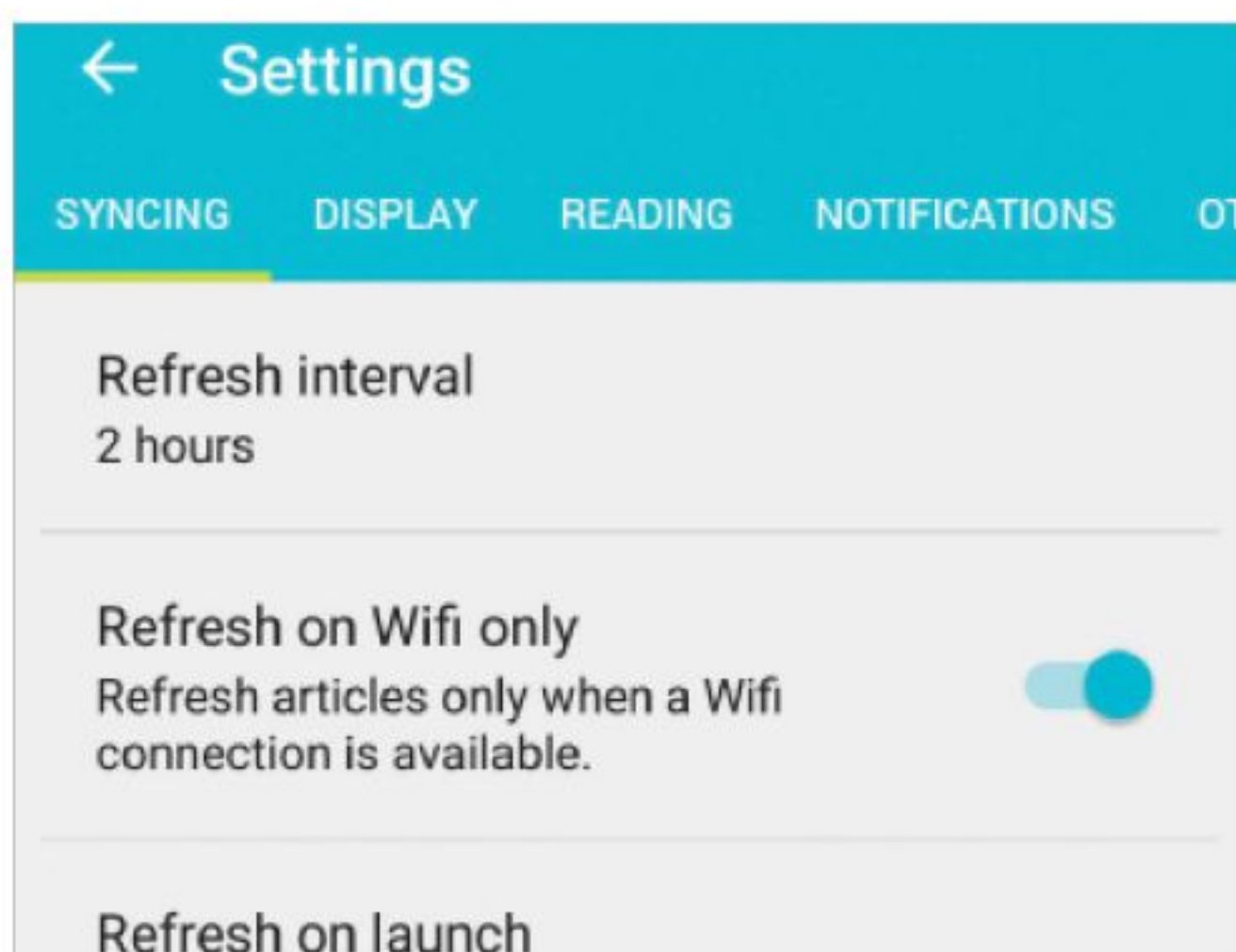
### 4 Create the feed

When you have made your choices you can make your feed. After this, you will be taken back to the main page of the app where you'll be able to read lots of stories from your favourite feeds to your heart's content. Next we'll look at some of the tweaks you can make to your feed.



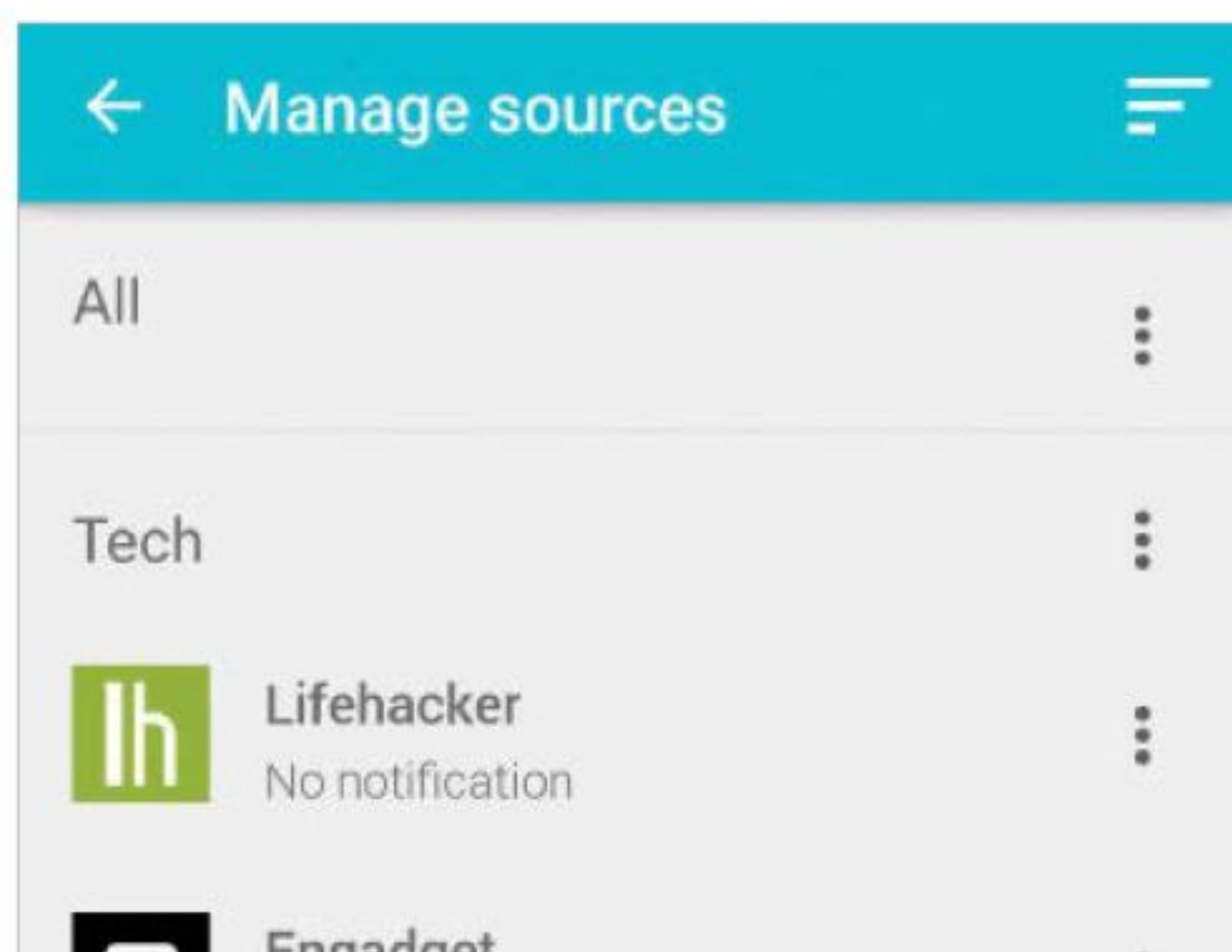
### 5 The main menu

The main menu is split in a number of slightly frustrating ways. You can tap on your various profiles to switch between the different feeds that will then display on the main page of the app. You can also spend on IAPs to get rid of the adverts that sometimes appear.



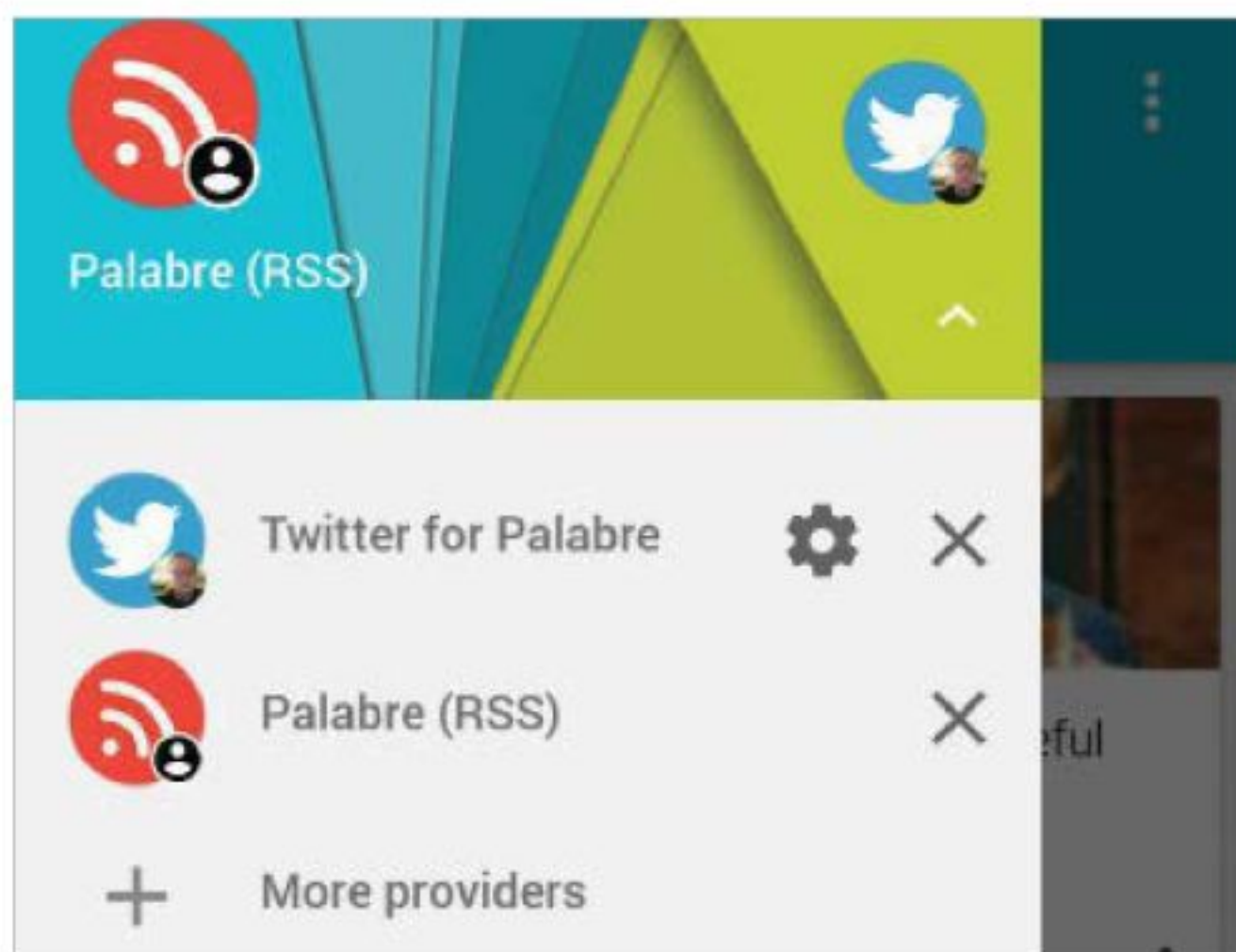
### 6 The settings menu

In the settings menu you can tweak a variety of options to make the app run smoother. If you're not on an unlimited data plan then it's best to keep the Refresh on Wi-Fi only option turned on. Have a play around with the options and see what works best for you.



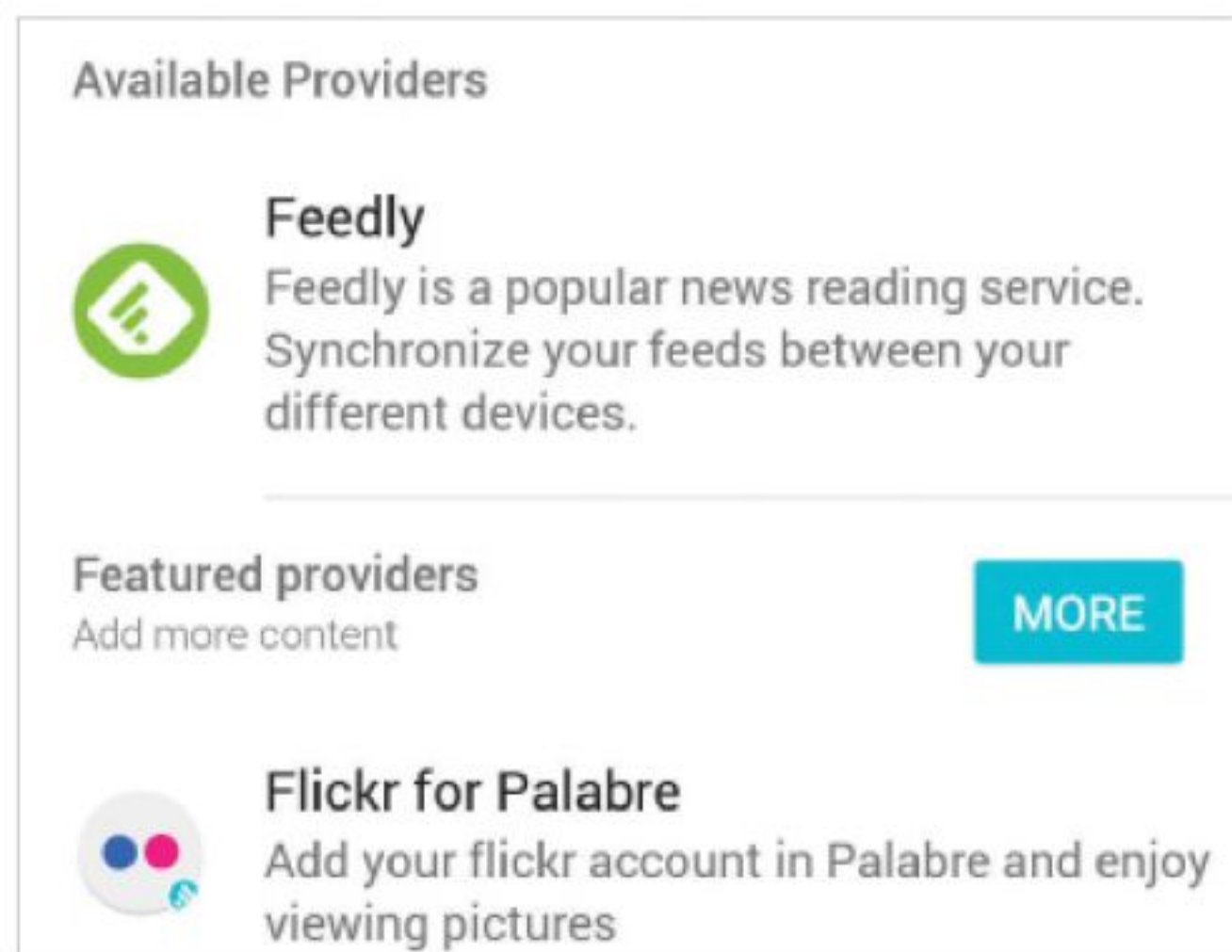
### 7 Manage your sources

You can set up different notification parameters for different sources or even take them out of your stream entirely. Tap the green + button to add new sources via recommendations, OPML files, RRS links or by searching. These will then be put into the section of your choice.



### 8 Add new feeds

Adding new feeds is a little fiddlier than it should be once you've created your news feed. You have to tap on the little arrow underneath your listed accounts. This will bring up another part of the menu. When you're there, tap on the More providers button at the bottom.



### 9 Choose them again

You can now add extra feeds in the same way you did at the start of the process. Again, some of them will need you to download extra content to your phone. You can then change their settings in the same way from the main menu. You now have your own news feed.

## faq

Ask your own question online at [littlegreenrobot.co.uk](http://littlegreenrobot.co.uk)

### Is there any way to change the look of the app itself?

Yes – hit the Settings button in the main menu and then tap across to the display settings. Here you can change how the stories are displayed as well as changing the fonts, the title size and the colour theme of the app as a whole. There are options to change what browser you use too.

### What other options are there for changing the way the app works?

Swipe across to the Reading section of the Settings options where you'll find a few tweaks you can make. You can set it up so the volume keys move through your feed, choose what a double tap on a story does and change whether the app displays in full screen or not.

## Need help?

Got a problem with your Android phone or tablet? Get in touch with us...

**facebook**  
/littlegreenrobot  
Get help from our Facebook community

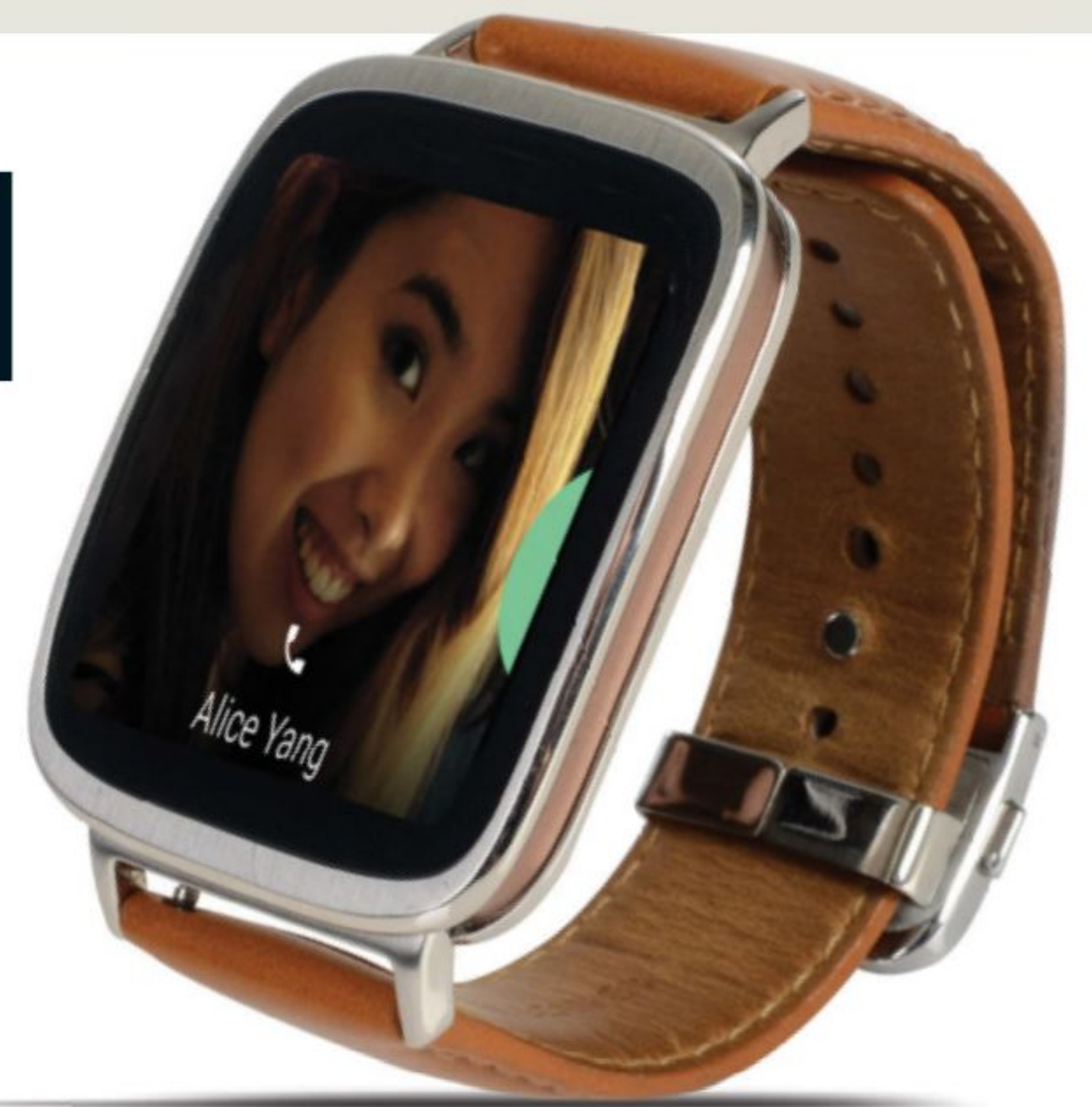
**twitter**  
@lgrobot  
Follow us to send your questions and thoughts

**email**  
[qa@littlegreenrobot.co.uk](mailto:qa@littlegreenrobot.co.uk)  
Send your questions for our team of experts to tackle



App used » Skype - free IM & video calls Works with » Varies with device

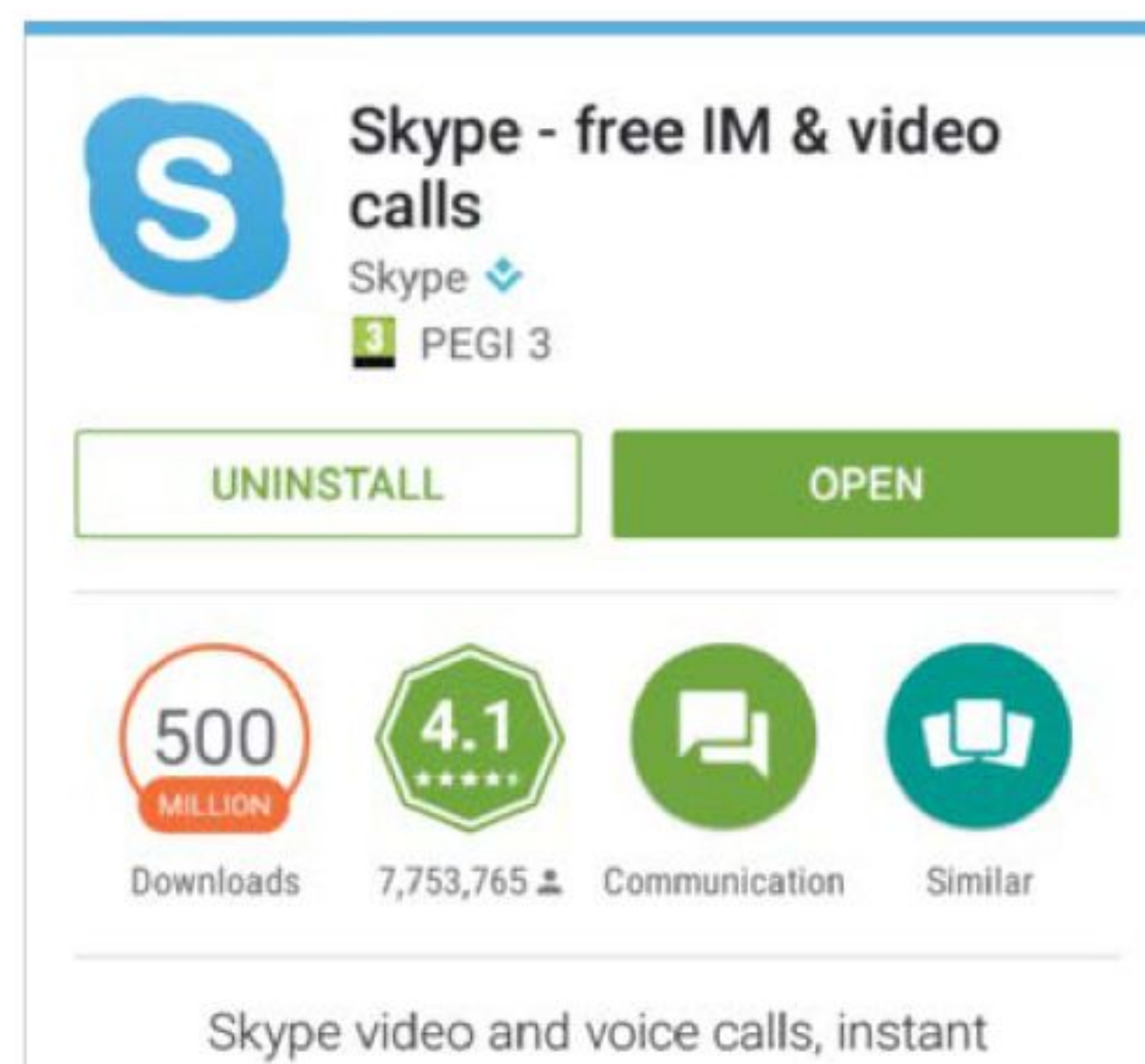
# You can control Skype calls from your wrist



Start communicating with others for free without even touching your Android phone

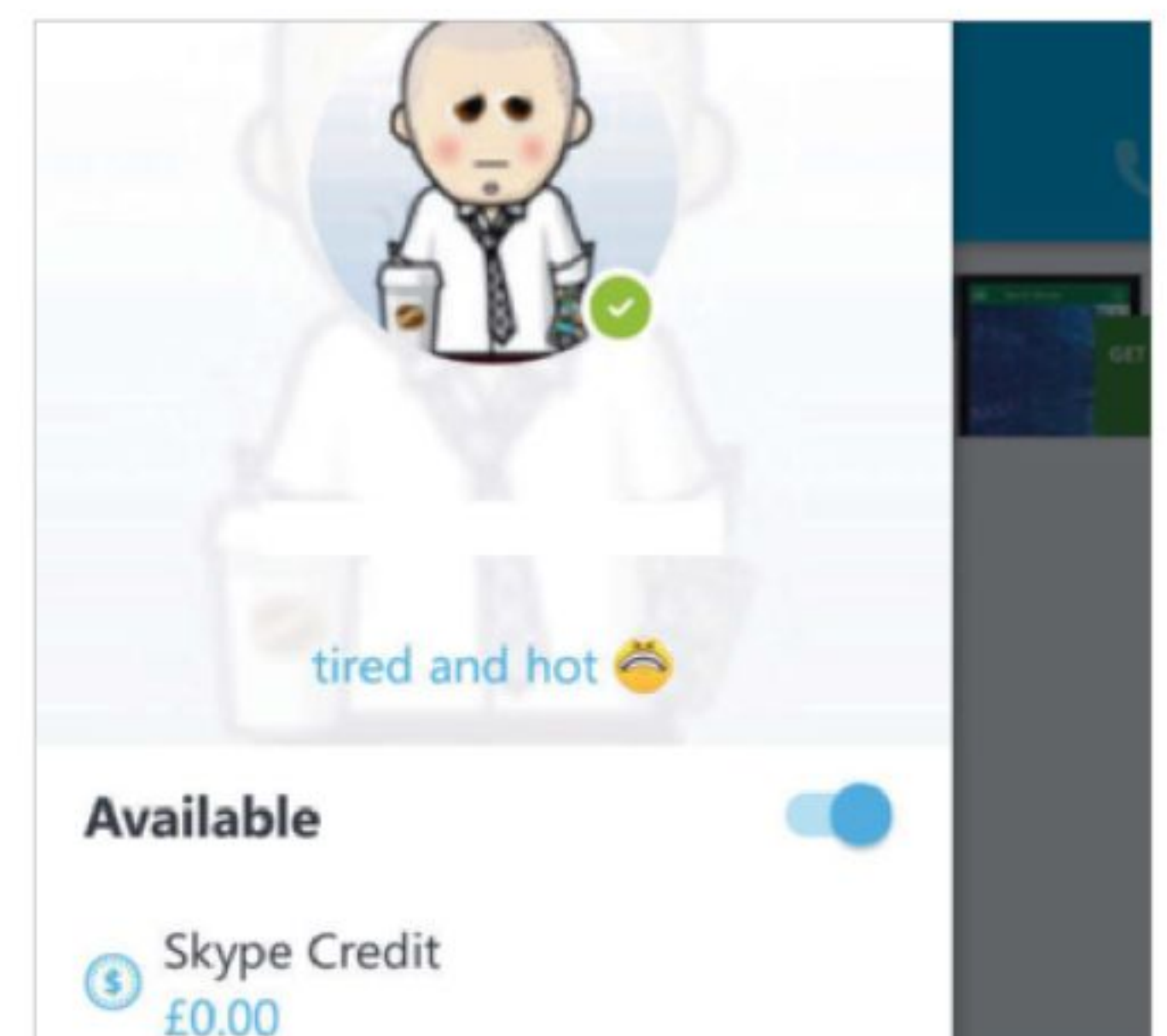
Skype is hugely popular on all of the major computing platforms for good reason. The quality of the communication, through voice and messaging, is superb and over time the platform has become extremely reliable. The fact that it is scalable offers a huge advantage, which means that you can Skype from a desktop computer, a laptop, a tablet, a phone and now an Android Wear watch.

We will show you how to set up your Android Wear device to work perfectly with Skype and how to take advantage of the included features. Soon you may find yourself using Skype from your wrist more than on your phone! The controls are so easy to use, no matter what you are doing, and emphasis has been placed on making the solution practical without overloading the small interface with unnecessary features. This considered approach is what works best on Android Wear apps and in this case the solution will likely work for you more often than you expect.



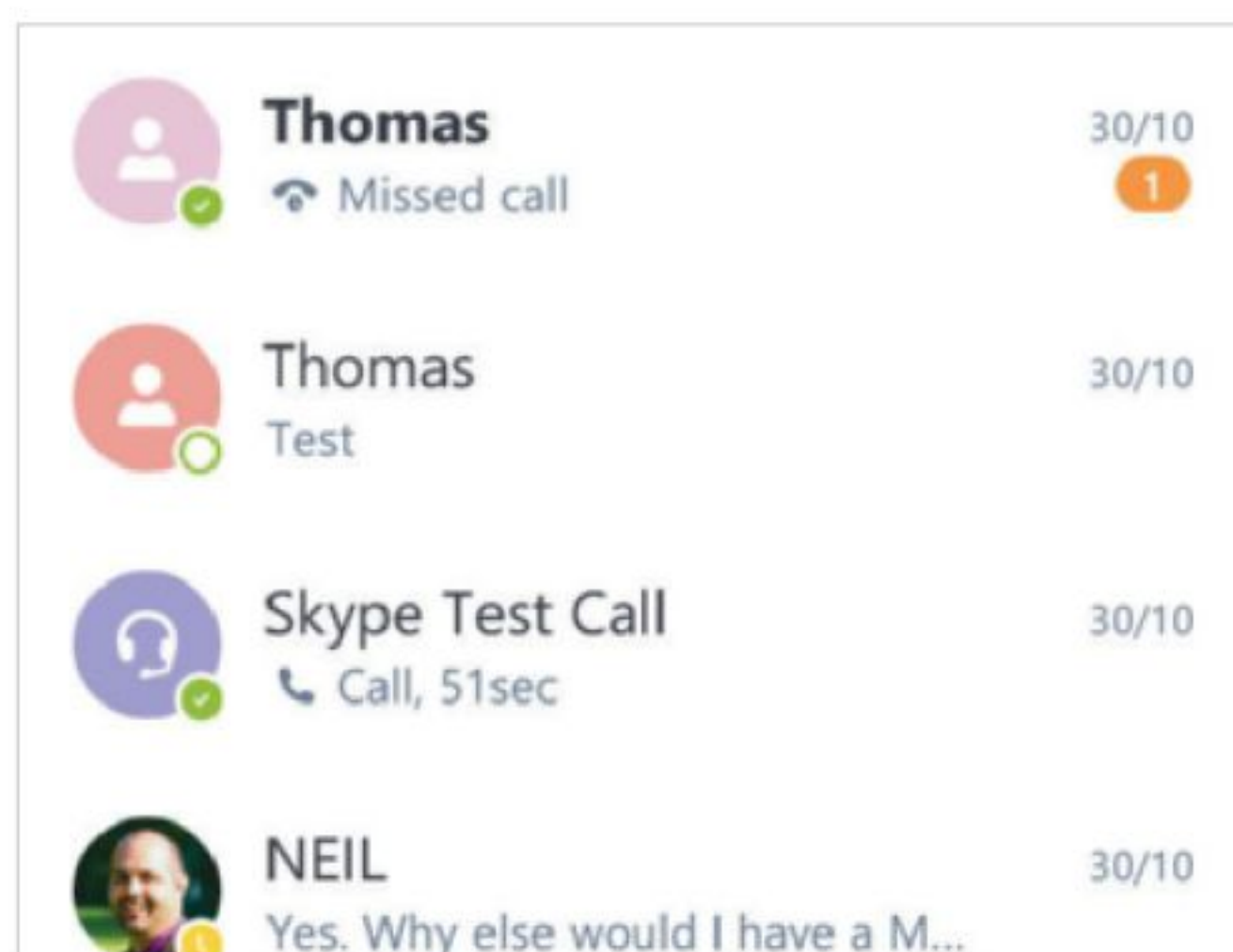
## 1 Download the app

Go to the Google Play store and download the free Skype app. As is usual with Android Wear, if the app supports the device it will automatically be available on the watch after it has been installed on the connected Android phone. The installation process really could not be any simpler.



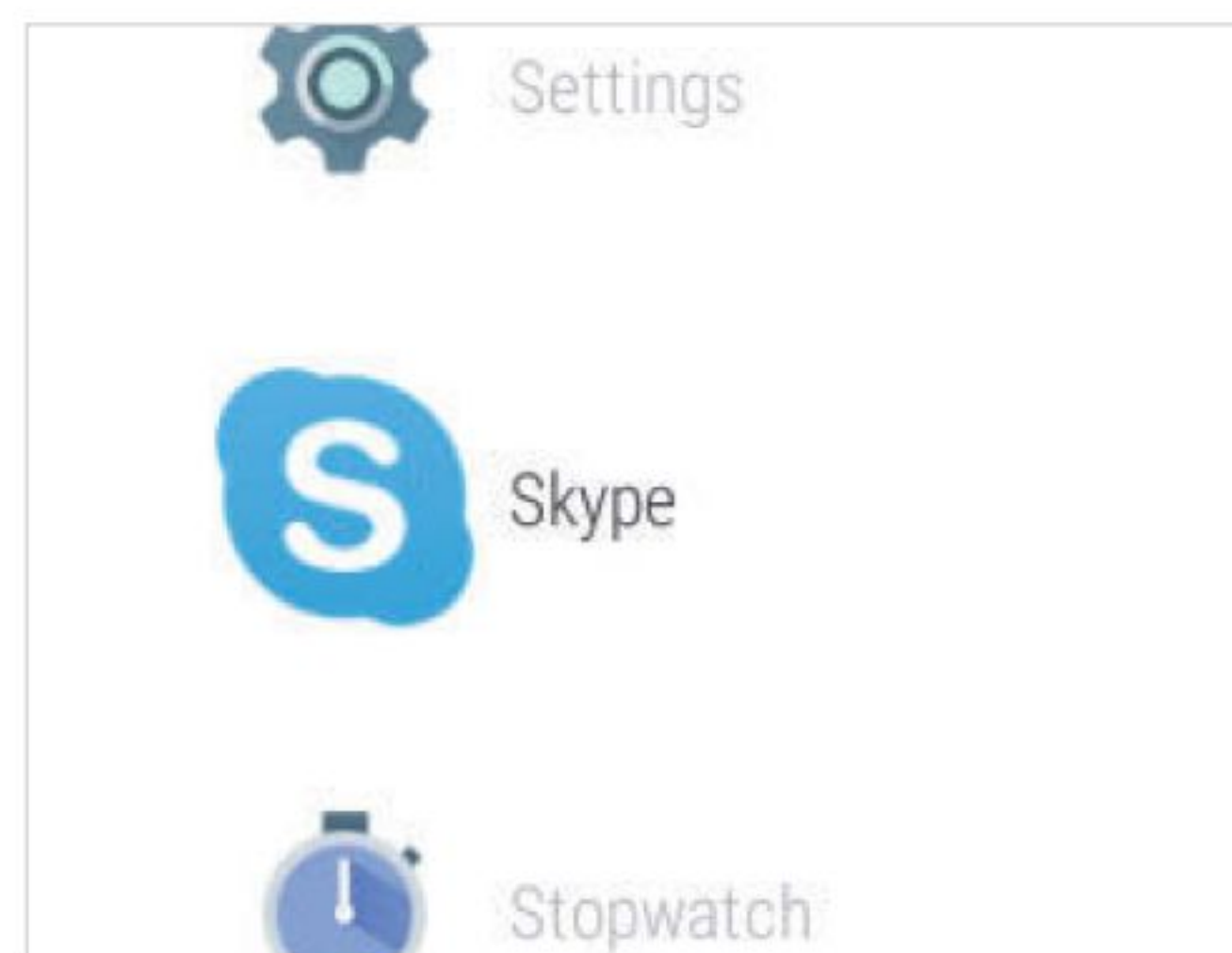
## 2 Sign in to your account

Sign in to your account on the Android phone and you will be all set up and ready to communicate for free. The watch app takes all of the data from the phone app and is not a standalone piece of software. The phone settings are all-important here.



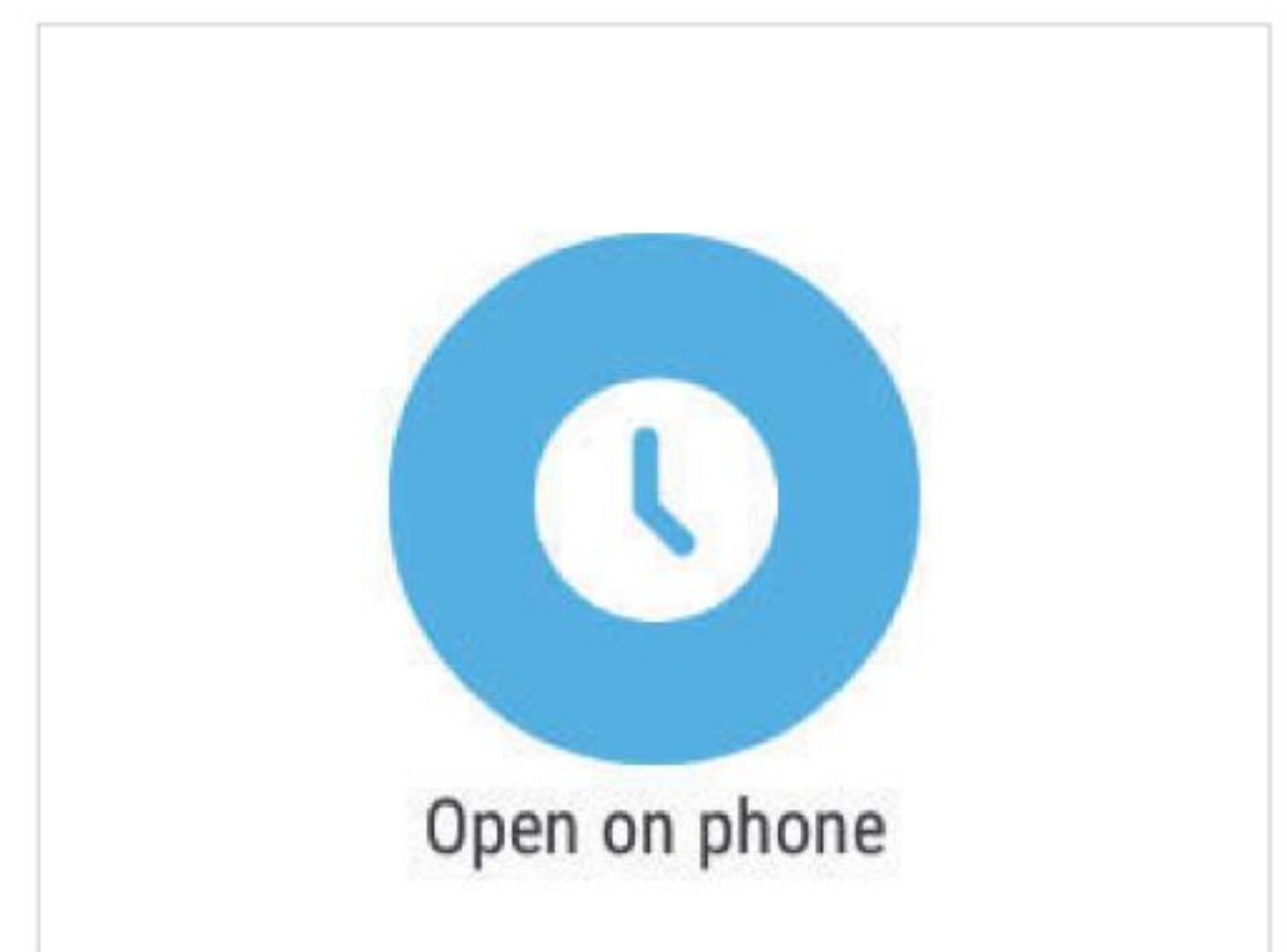
## 3 All of your conversations

Your conversation history will be displayed on the Skype phone app, but not on the watch. Remember that the watch part is purely designed to help you communicate when it is the most convenient option. However, it does include all of the features you will need.



## 4 The app is installed

If you now scroll through the apps on your watch, you will see the Skype app included. This will be enough to ensure that you are able to control Skype through your watch, provided you have the right settings enabled on your phone. The whole installation is very easy.



## 5 Open the app

The entire setup of Skype on Android Wear is reactive and you can do very little proactively. If you tap the Skype icon, you will only see an option to Open on phone, which does exactly what it says on the tin. You will rarely need to use this option.



### 1 Don't overdo it

Try not to have too many apps enabled as this can lead to notification overload.

### 2 Mind the battery

If you are running low on battery life, try turning off Bluetooth in order to save on some power.

### 3 It's not a toy

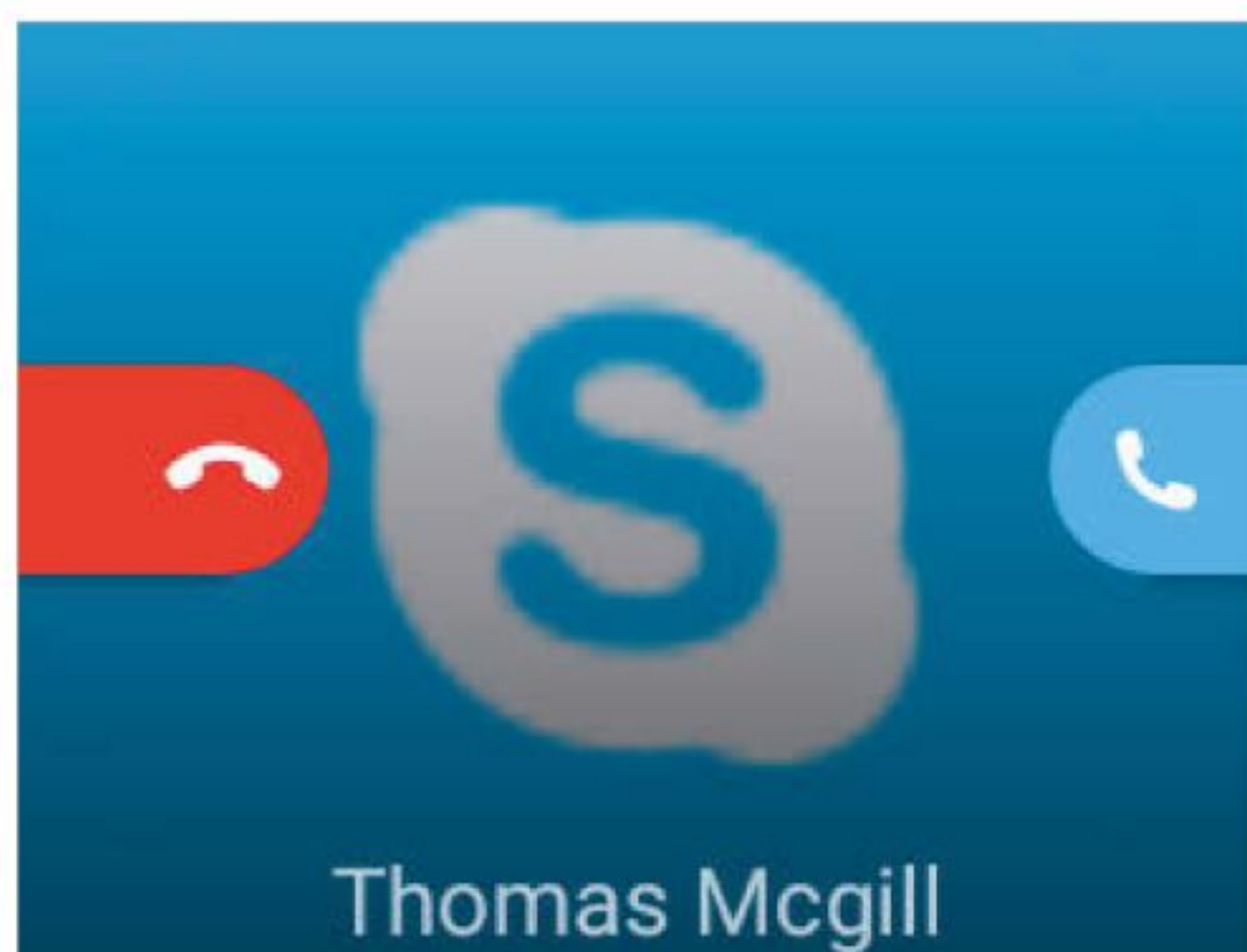
Don't use your smartwatch just because it is there. Use what makes sense at the time.

### 4 Practice makes perfect

The more you use your watch, the more you will understand the benefits it offers.

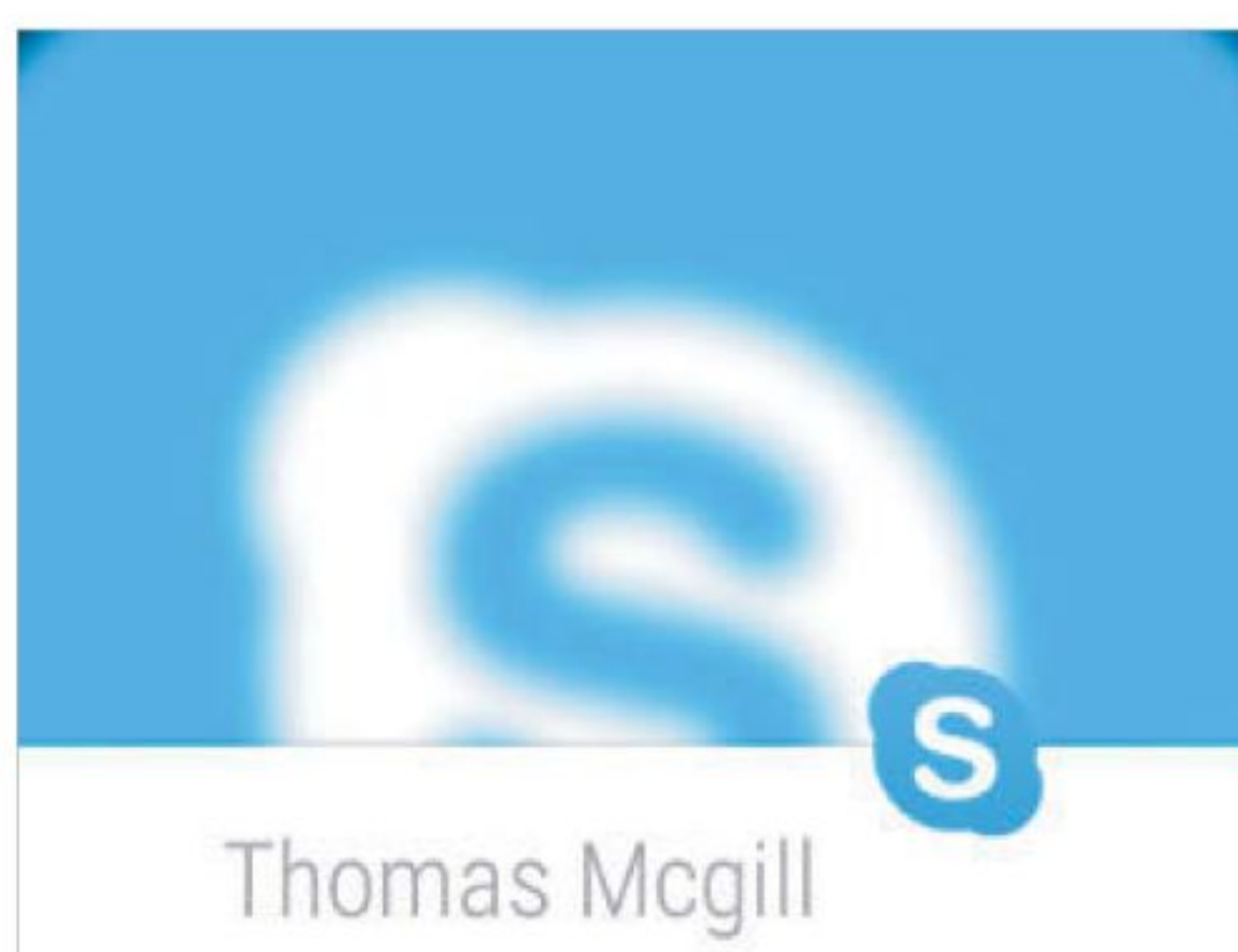
### 5 A bigger screen

If you expect to communicate often in Android Wear, buy a watch with as big a screen as you can find.



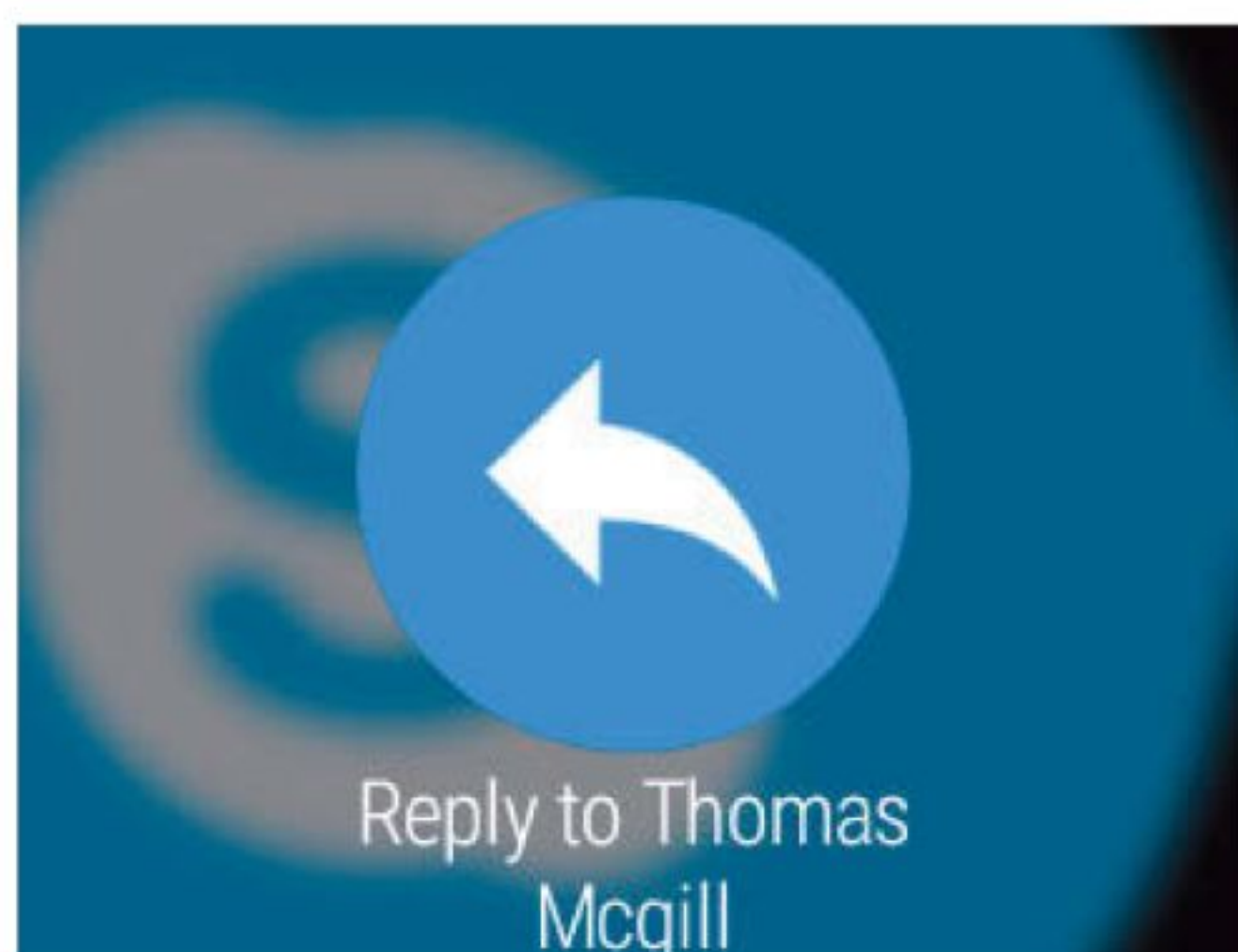
### 6 Deal with incoming calls

Incoming Skype calls will pop up on the main screen of your Android Wear watch as soon as they come in. You can then slide left across the screen to dismiss the call or right to answer it. It sounds basic and it doesn't take long to get used to how it works.



### 7 Incoming messages

Incoming messages will be displayed just like text messages when they are received. Tap the notification to read more of the message and then swipe to decide what to do next. The system is consistent with the way Android Wear works for all other default and third-party apps.



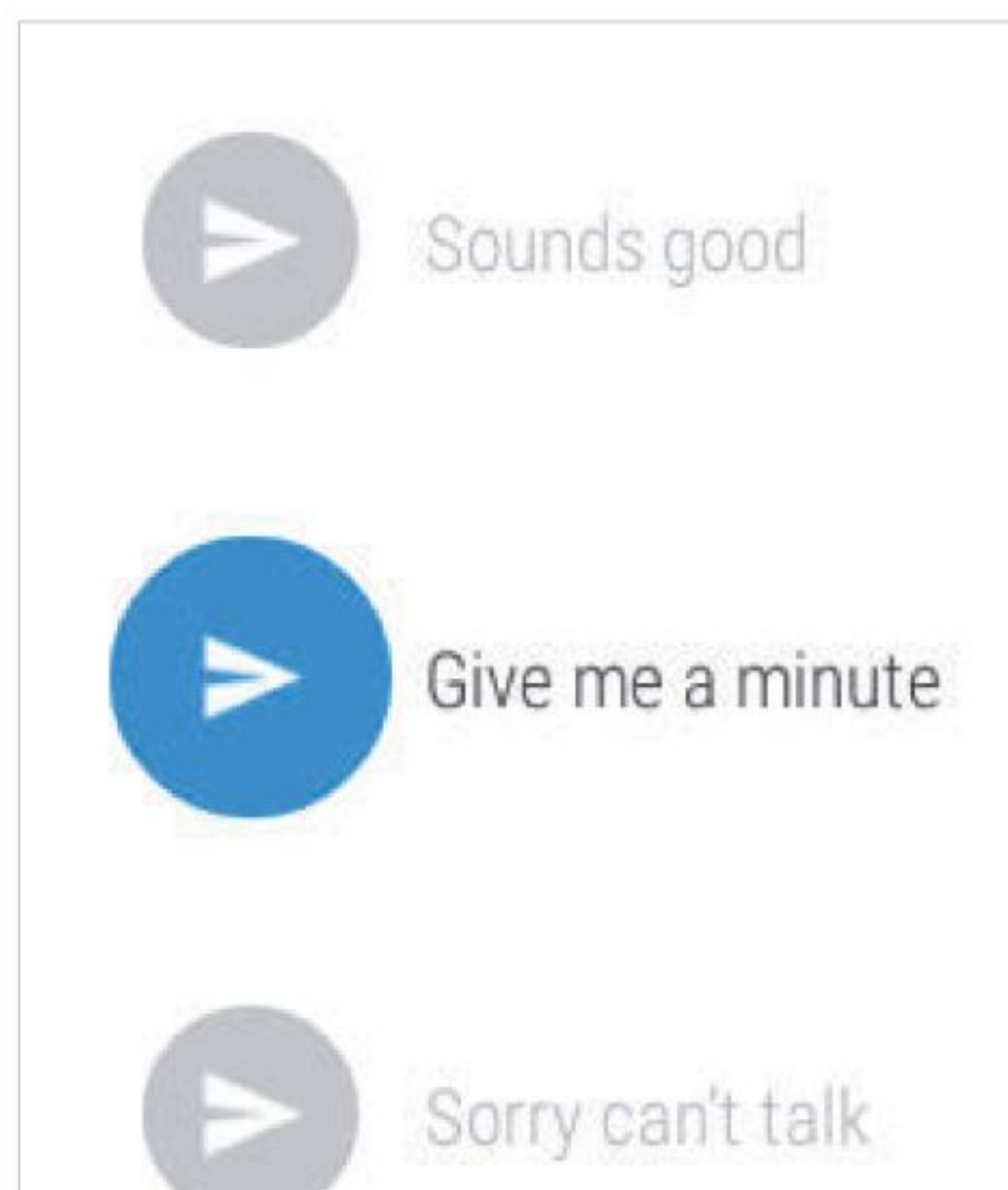
### 8 Time to reply

Swipe from the notification and you will see a Reply to option appear. This is ideal for those times when reaching for your phone is just a little inconvenient or if you only need to send a very short message that is achievable on a small-screened Android Wear device.



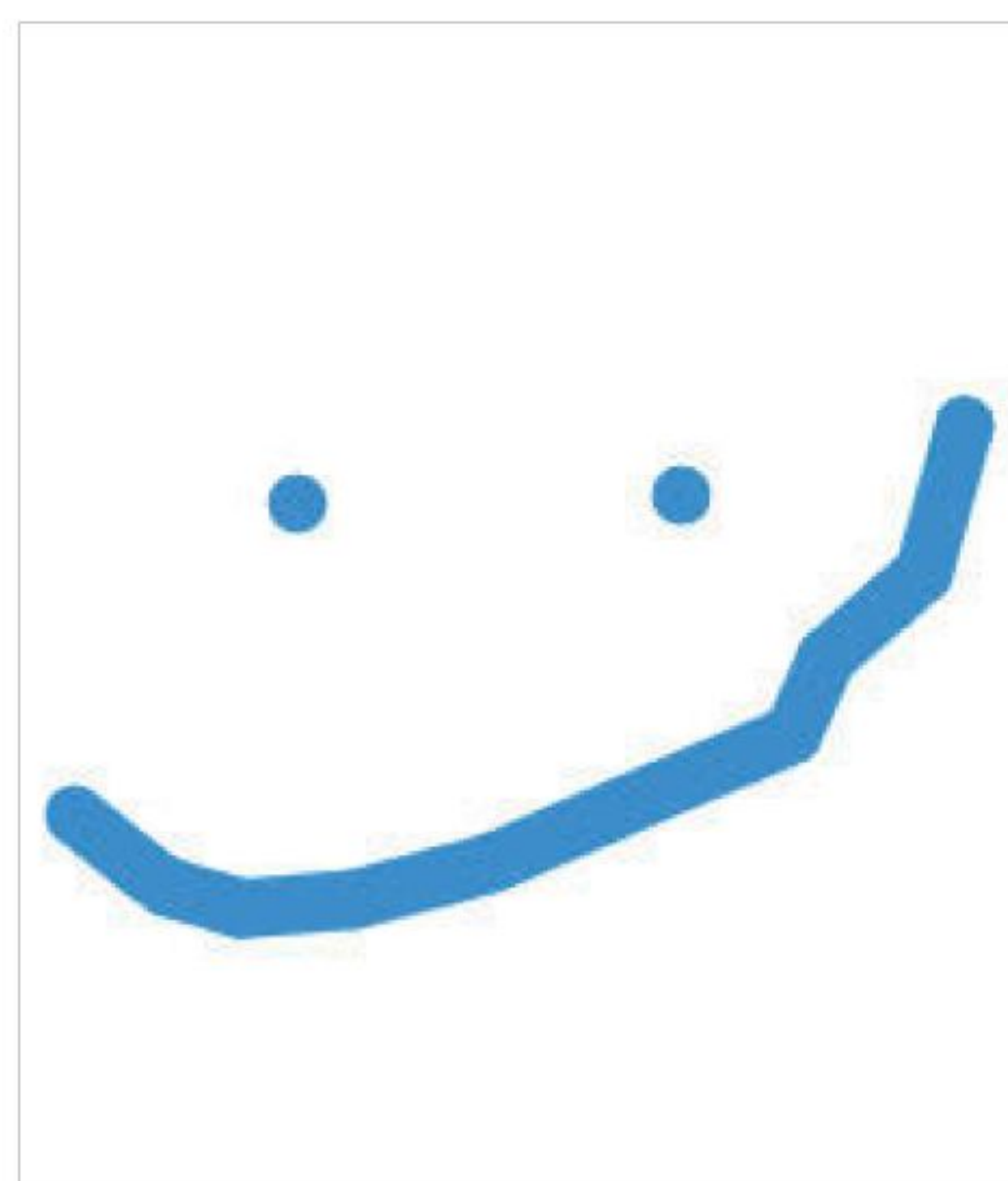
## No time for typing out a message?

Skype has a variety of options for you to reply instantly to your friends without any hassle



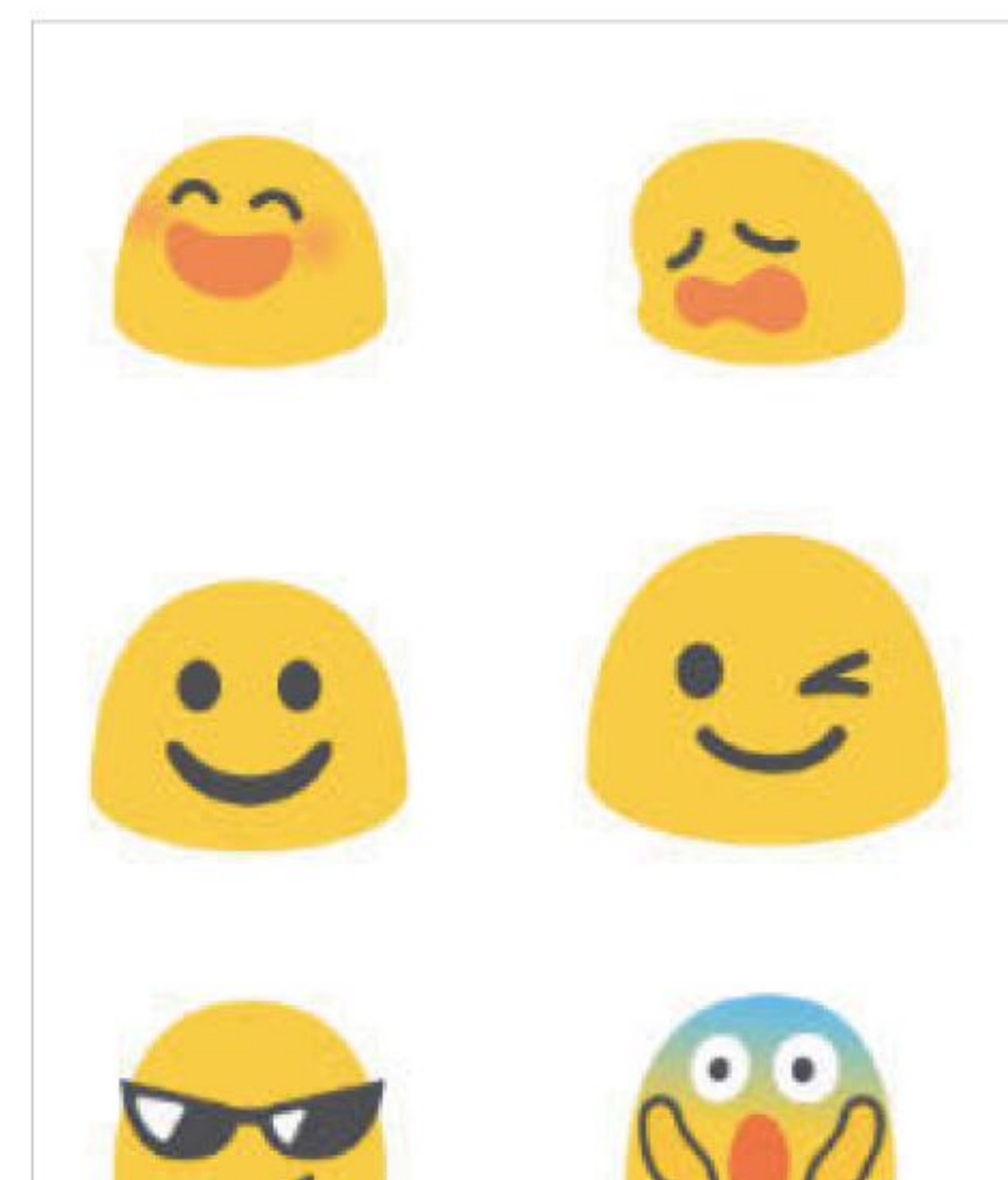
### 1 Use preset phrases

When you reply to Skype messages on your Android Wear watch, you can use one of many preset phrases from within the app. This means that all you have to do is slide up and down the list, then tap your chosen one for it to be sent immediately.



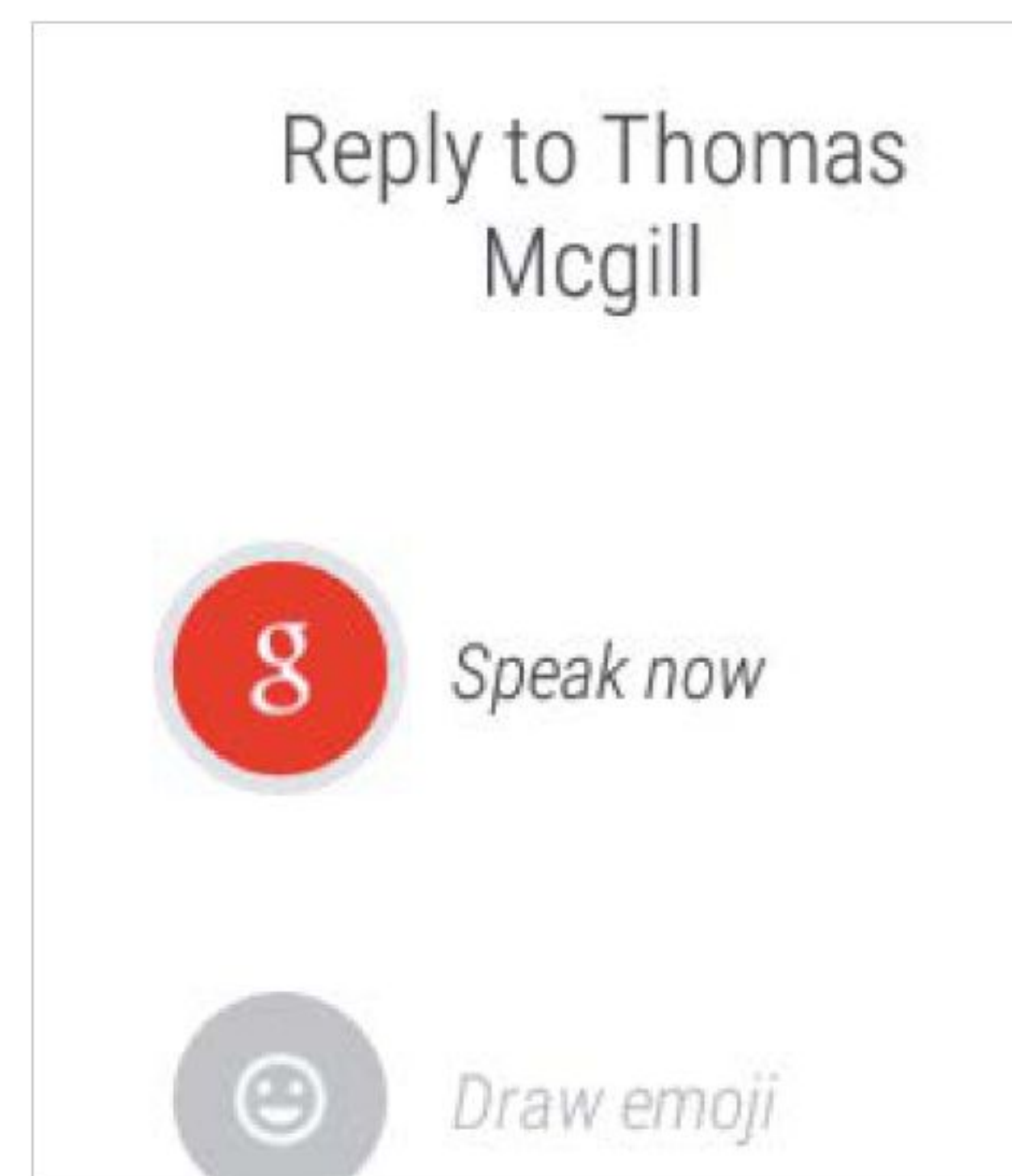
### 3 Draw a picture

It isn't the most natural thing to do on a watch, partly because of the very small screen, but you do have the ability to send a hand-drawn picture from your Android Wear device within the Skype app. This will ensure that the message you are sending is unique in every way and communicates your feelings.



### 2 Send an emoji

Emojis are the perfect way to add emotion to a message without needlessly wasting a lot of time. They are available via an icon at the bottom of the screen and can be sent in just two taps. They are also perfect for communicating via an Android Wear device.



### 4 Dictate your answer

The voice recognition system that Google uses is now so accurate that it makes sense to use it if you want to send longer Skype messages using your Android Wear watch. This is particularly useful on a watch where other data entry methods can be a little time-consuming and difficult to manage.



App used » Meter Works with » Android 4.3 and up

# See your device's vital statistics at a glance

Create a data-driven live wallpaper with Meter and your device's stats

Another experimental app from the clever guys at Google Creative Lab, **Meter** is a live, data-driven wallpaper that shows a visualisation for each of the three basic aspects of your phone or tablet: **signal strength, battery life and notifications**. Rather than the user being able to select between them manually, Meter automatically cycles to the next visualisation type whenever you unlock the device. The geometric graphics are very simplistic in design, but they can be animated by tilting the phone – for instance, the signal-strength meter is a triangle filled with a coloured fluid that gushes around in a convincing fashion. It's a shame that there are no customisation options and the latest version even omits the ability to toggle each of the three data types on and off, but as a proof-of-concept Meter is an interesting example.

## The three data graphics

Each time you unlock the device, Meter will cycle to the next of the three data patterns



**Wi-Fi or mobile signal strength**  
The first visualisation shows the strength of the Wi-Fi signal in turquoise (with the connected network name listed below) or the 3G/4G mobile signal strength in orange. The more liquid that is contained in the triangle, the stronger the signal.



**Check battery**  
The next time you unlock your phone, Meter will display this graphic that shows the charge level of the device's battery. The bigger the ball – which moves when you tilt the phone – the more battery you have. It's also shown as a percentage below the ball graphic.



**Number of notifications**  
When you unlock the phone again, Meter will display its third graphic. The number of bars indicates how many notifications you have. Since you can't tap the graphic to access them, you'll need to pull down the notifications shade.

### Signal strength

The first of the three visual patterns, this shows either the strength of the Wi-Fi signal in turquoise (with the connected network name listed below) or the 3G/4G mobile signal strength in orange. The more liquid that is contained in the triangle, the stronger the signal.

### A ball for battery

Meter's second visual pattern shows how charged up your device's battery is. The bigger the ball inside the circle, the more charge you have left; it's also shown as a percentage below the graphic. Tilting the device causes the ball to move around inside the circle.

### Wallpaper setting

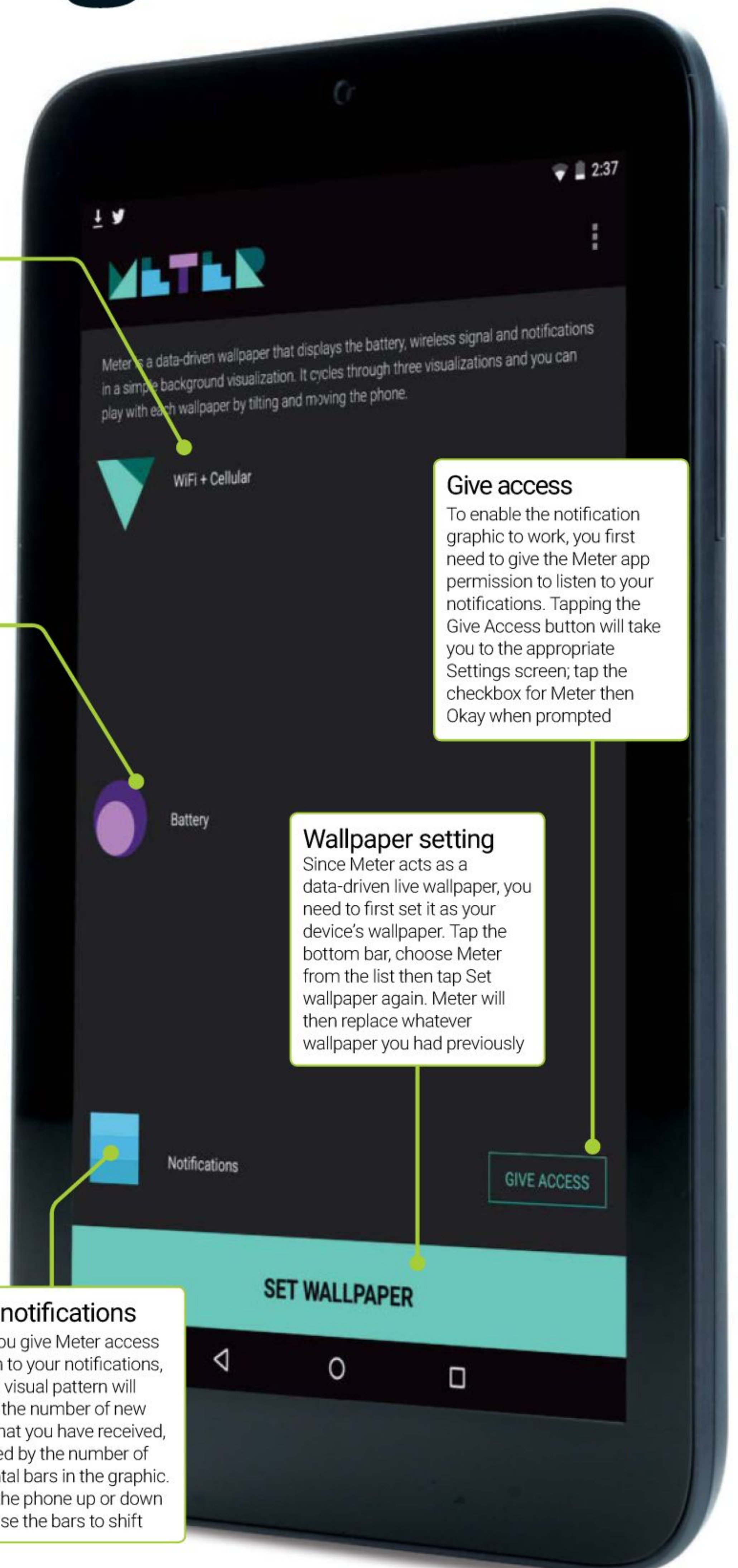
Since Meter acts as a data-driven live wallpaper, you need to first set it as your device's wallpaper. Tap the bottom bar, choose Meter from the list then tap Set wallpaper again. Meter will then replace whatever wallpaper you had previously.

### Give access

To enable the notification graphic to work, you first need to give the Meter app permission to listen to your notifications. Tapping the Give Access button will take you to the appropriate Settings screen; tap the checkbox for Meter then Okay when prompted.

### New notifications

Once you give Meter access to listen to your notifications, its third visual pattern will display the number of new alerts that you have received, indicated by the number of horizontal bars in the graphic. Tilting the phone up or down will cause the bars to shift.





App used » S Health-Fitness Diet Tracker Works with » Android 4.4 and up

# Stay fit with S Health on non-Samsung devices

Samsung's popular S Health fitness monitoring app is now available for other Android devices above KitKat

## Confused by the fitness app explosion?

Wishing the Google Fit app was more comprehensive? What you need is the Samsung S Health app that is now available for non-Samsung devices.

As long as you're running Android 4.4 KitKat or above, your phone should be compatible with this app. This means that you can use its great features as a control centre for logging and monitoring your fitness, diet and overall health.

Getting started is easy. While there is no compulsion to set up or log in to an existing Samsung account, this is useful for syncing the data you record with the app, especially if you move to another phone or want to assess your progress online on a PC.

A tile-based user interface displays the trackers, goals and programs that you set up, enabling you to quickly check your progress or update your dietary intake.

Want to get fit? Start here.

## Not so smart

While S Health-Fitness Diet Tracker is now compatible with a whole host of non-Samsung devices, be aware that the Samsung smartwatches are not. This means that you're limited by whatever wearable technology is compatible with your phone, unless you opt to use it alone

## Watch your water intake

Do you drink enough water? The S Health app enables you to record how many glasses of water you consume each day. Just tap the plus button on the Water tile in order to update the record and watch the numbers rise

## What does it all mean?

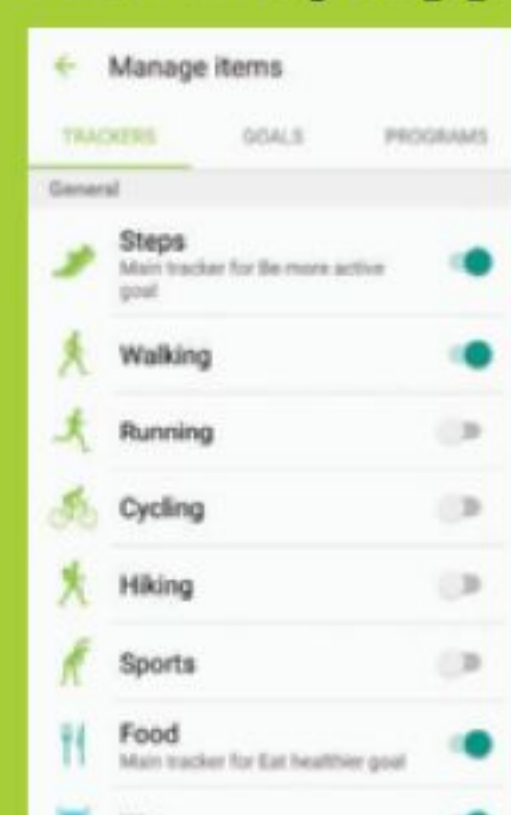
There is little point in recording this data without doing something with it. While most of the compilation of the data into charts takes place on your phone, it is worth syncing to Samsung's servers in More>Settings to see more options

## How much food do you really eat?

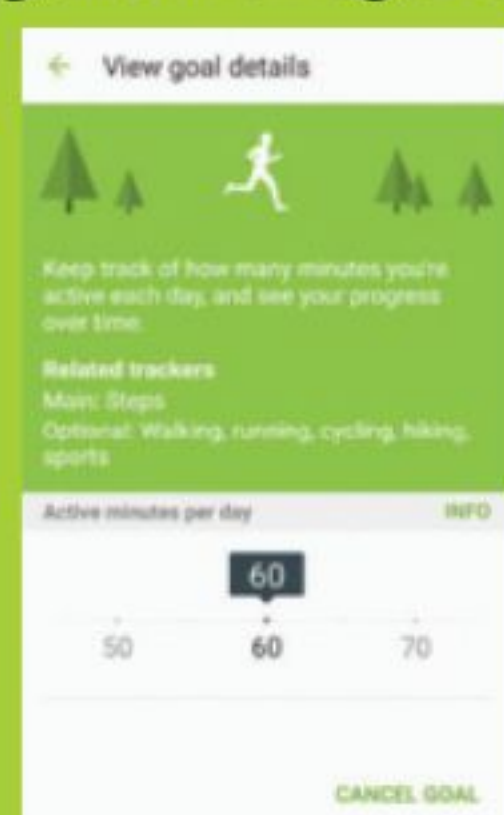
Record your meals to gauge your calorie intake. This is easily done by tapping Add, selecting the corresponding meal and typing in the name of the meal or food you have eaten. This is then added to a daily running total

## Manage trackers and goals

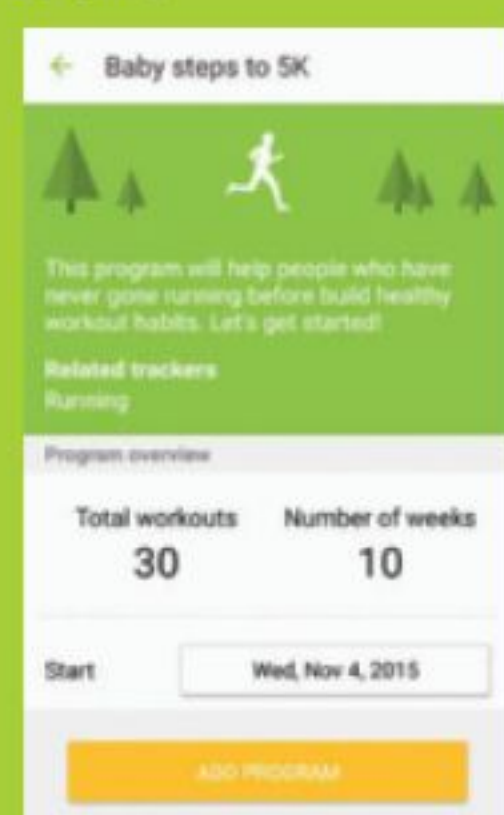
There is little point using any health app without tracking your activity. This can be set up in S Health by tapping the Manage items tile



**Add a tracker**  
Unfit? Tap the on/off switch found on the Steps tracker to get started. You can also add any other land-based activities that you enjoy. Scroll further down to add trackers for your weight, caffeine intake, sleep, blood pressure and much more.



**Set your goals**  
Desire a more active lifestyle? Perhaps your aim is to eat healthier or feel more rested and less tired? These aims can be managed by setting up goals on the S-Health app that can be viewed via the corresponding screen to then tie into the trackers you have enabled so far.



**Start fitness programs**  
The Programs screen enables you to plan towards major achievements like 5,000 or 10,000 km runs. To join these programs, tap the one you wish to achieve, view the details and click Add Program. It's time to get fit!



## Start walking

Unlike the Google Fit app, S Health doesn't automatically detect when you are in motion. As a result, after you've added a preferred tracker (tap Manage items to get started) you will need to manually tap Start when you begin the activity



App used » Boxcryptor Works with » Android 4.0.3 and up

# Encrypt any cloud storage files

Keep your files safe from snoopers by encrypting them in the cloud

While the security aspects of the Android operating system have considerably improved as of late, there's still some scope for unscrupulous people to get hold of your stored cloud files if you aren't careful with what you do with them. To be on the safe side, we highly recommend encrypting each and every file you currently have stored across your cloud accounts – it's easier than you might think and won't cost you a penny.

Boxcryptor is an all-in-one encryption app that includes all the necessary features and settings to help keep your files safe in the cloud. What's particularly pleasing about the app is that it works across a plethora of cloud accounts, so whether you're a Dropbox, OneDrive or Google Drive user, you'll be covered here. It's also remarkably quick at completing the process, something we don't tend to find with similarly styled apps.

Use the following steps to correctly encrypt your cloud storage account and keep your files safe from outside interference.

**"We highly recommend encrypting each and every file you currently have stored"**

## Start encrypting

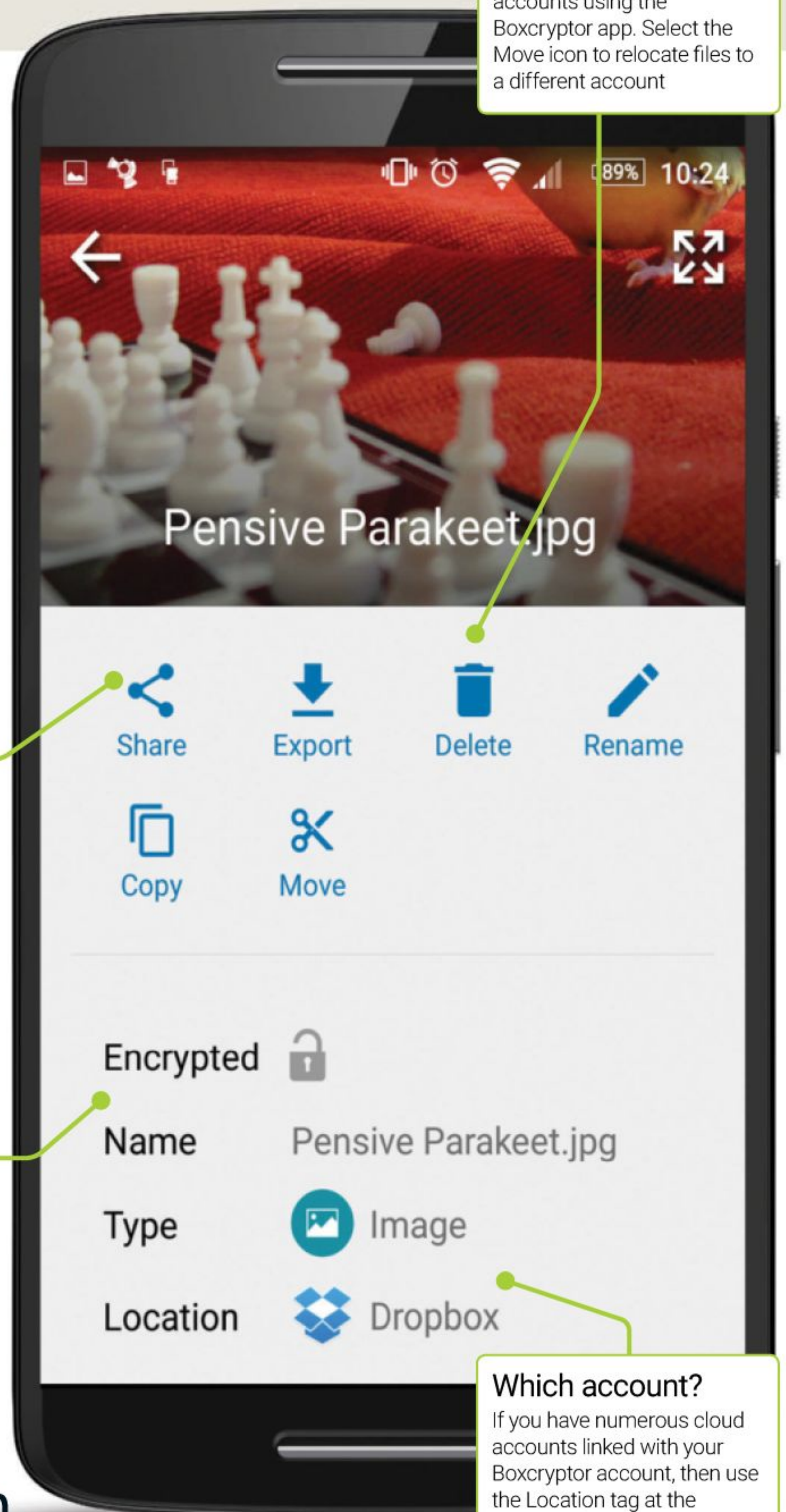
You will want to use the Share button to start the encryption process. It usually only takes a few seconds for the app to process any of your uploaded and encrypted files

## Is it encrypted?

At the bottom of the overview screen you will be able to see if your file is encrypted. You should find that once you have added a file to your Boxcryptor app that this symbol will change to a green, locked padlock

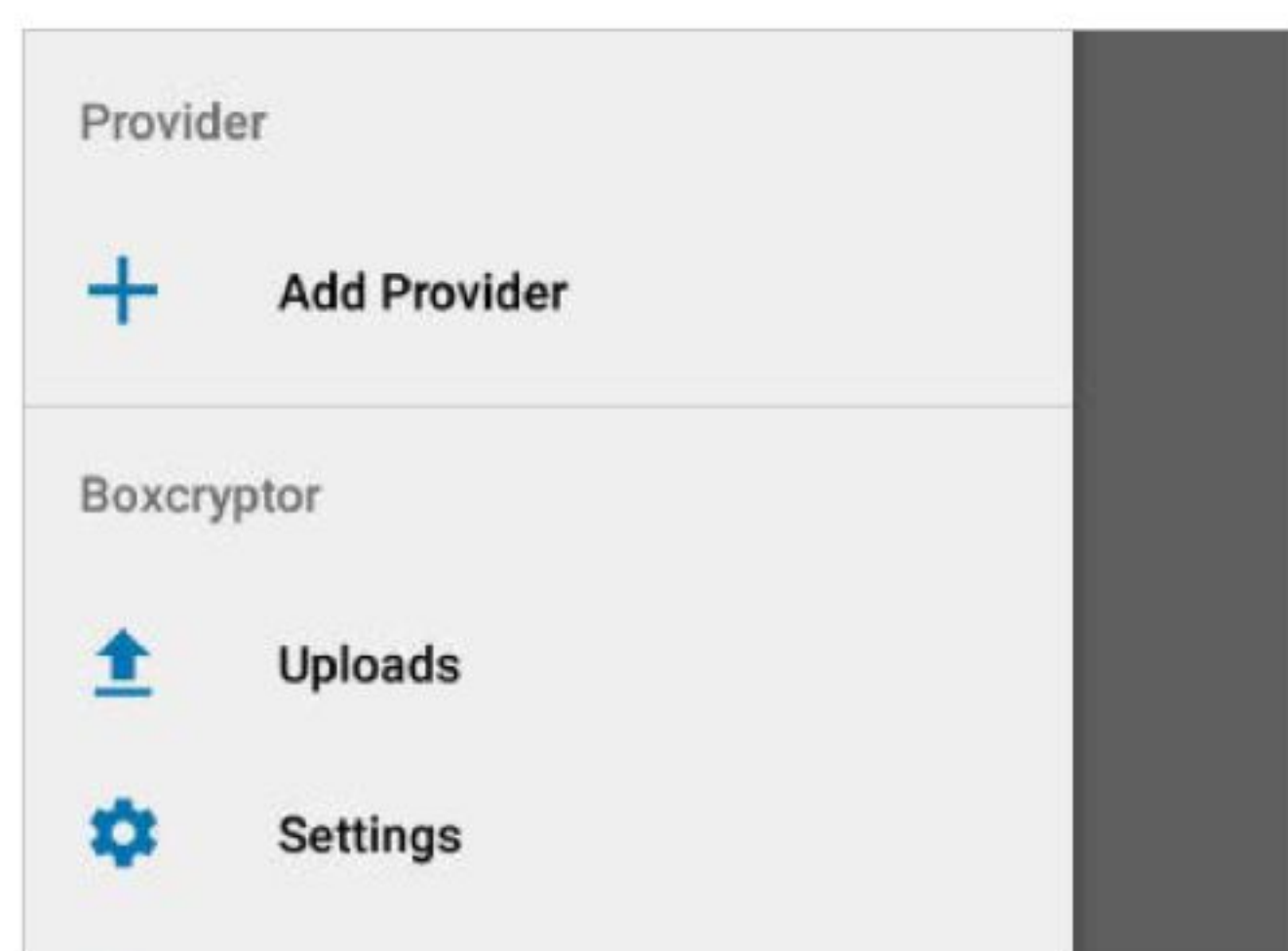
## Reshuffle your files

It's possible for you to move some of your files between accounts using the Boxcryptor app. Select the Move icon to relocate files to a different account



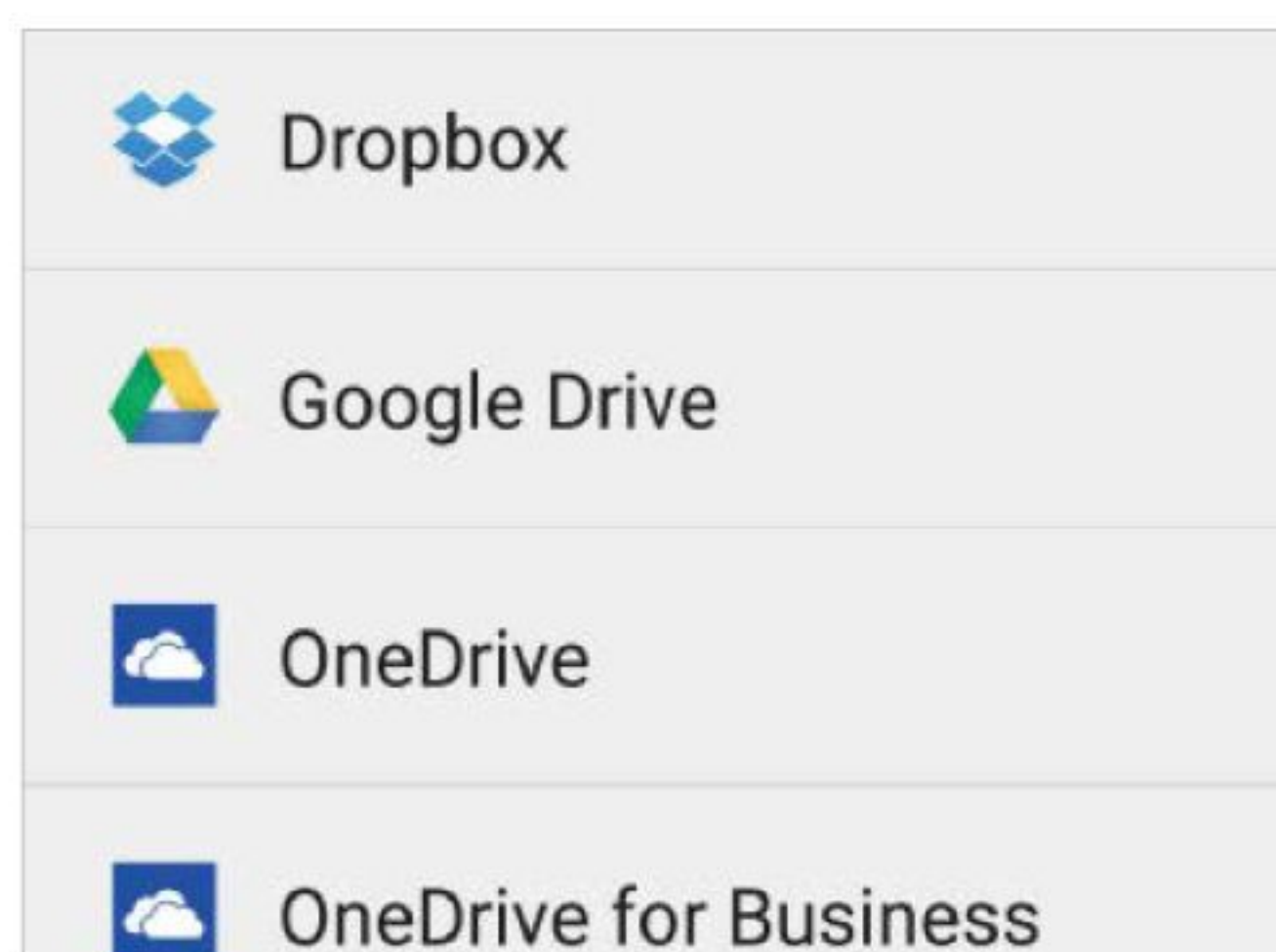
## Which account?

If you have numerous cloud accounts linked with your Boxcryptor account, then use the Location tag at the bottom of the screen to view the particular account this specified file is linked to



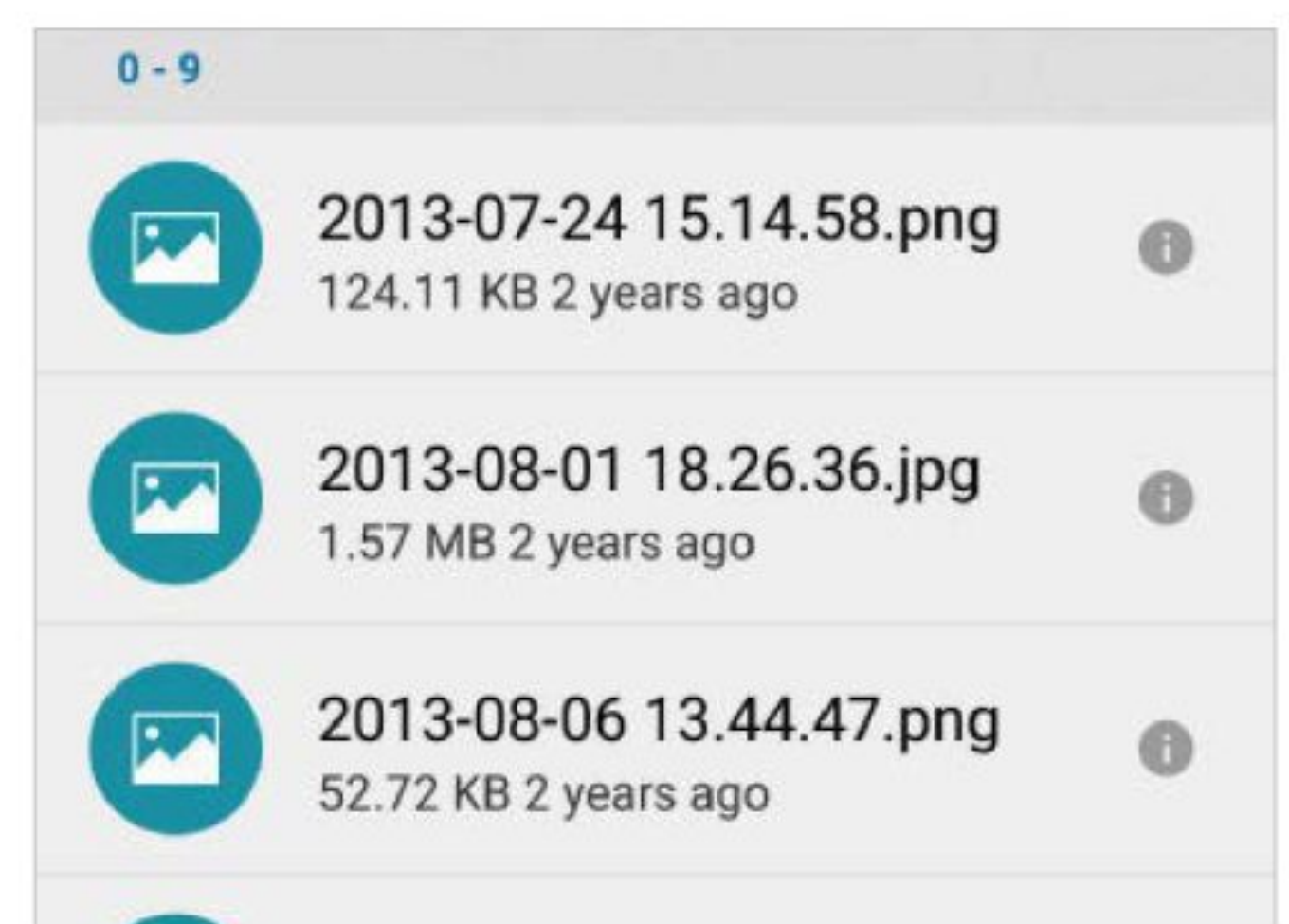
## 1 Add a provider

After creating a master password for your Boxcryptor account when you first open the app, you'll be taken to the app's homescreen. From here you'll want to press the menu icon in the top left of the screen and select the Add Provider option from the newly opened sidemenu.



## 2 Select an account

A list of compatible cloud accounts that can be encrypted will now be shown on the next screen. Scroll through the list until you find one that you want to start encrypting. You will then be prompted to enter both your email and password to fully connect Boxcryptor to your account.



## 3 Manage uploads

You should find that all of your stored files will now be displayed. Users have the option to either encrypt individual files or whole folders, which is particularly useful if your account is disorganised. By default you'll find that your files are saved in alphabetical order.



## Don't like Boxcryptor? Try one of these other encryption apps we recommend

### 1 Quick Crypt

Billed as the quickest encryption app there is, Quick Crypt makes files inaccessible in seconds.

### 2 Password Safe

Encrypt the logins used for apps and social media. Password Safe can put them all behind a vault.

### 3 Folder Lock

Add a series of passwords to your apps, photos, videos and so on, and keep them safe in this one app.

### 4 SECRECY

Completely hide your private files, so even the most eagle-eyed snooper won't be able to find them.

### 5 Sophos Secure Workspace

Sync your accounts into one place and manage each file within a password-protected workspace.



### 4 Take a peek

In some cases you may have trouble distinguishing between certain files. For a quick preview of a file, simply press on its name within the app. Once you've taken a look at it, press the back button on your device to head back to the file overview screen.

Encrypted	
Name	Costa Rican Frog.jpg
Type	Image
Location	Dropbox
Size	346.32 KB
Created	25 February 2012
Modified	11 April 2013

### 5 Before you encrypt

Once you've chosen the file you want to encrypt, press on the to the right of its listing. This screen will give you a full overview of the file, as well as show you its current encryption status. To encrypt it, you'll want to select the Share icon that's provided.



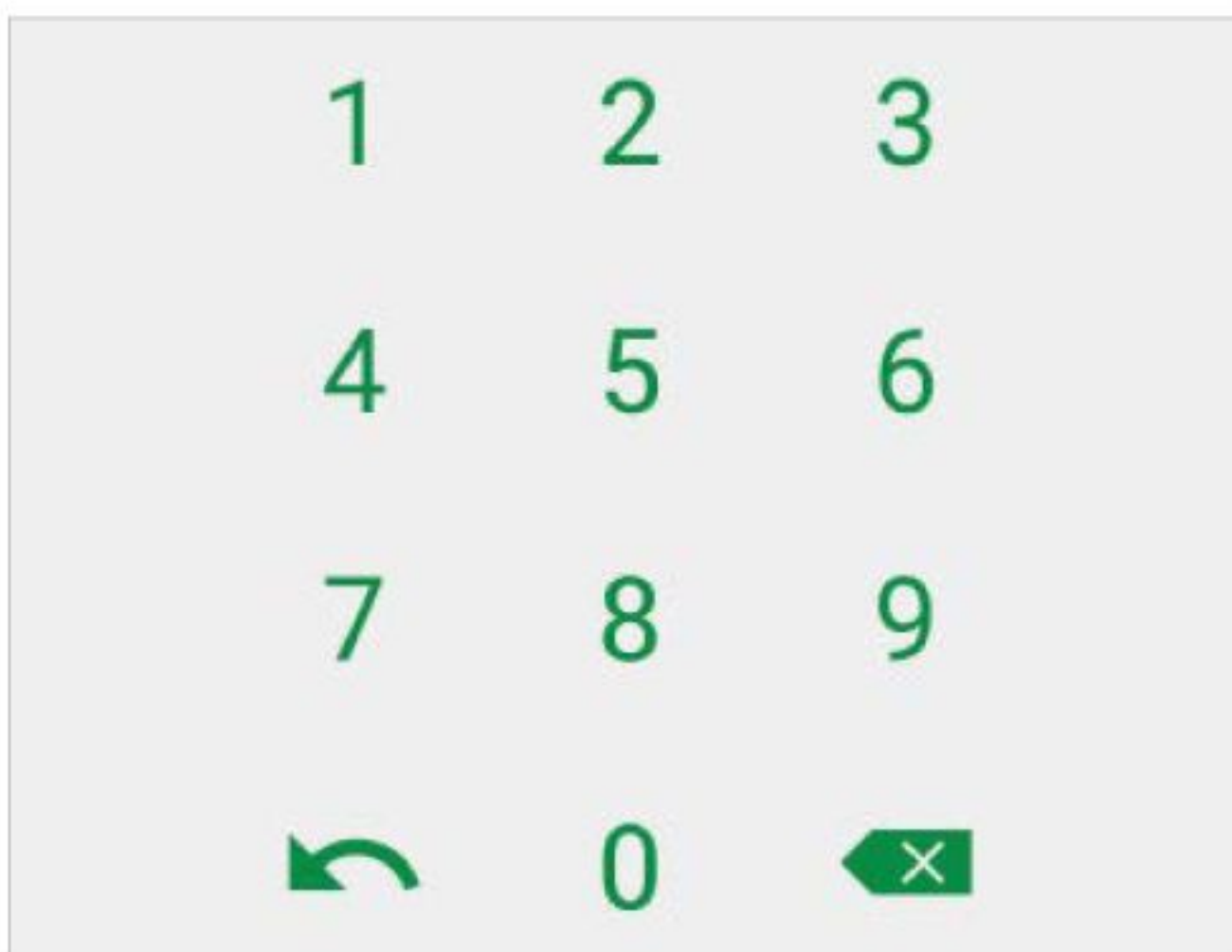
### 6 Want to upload?

From the Share menu select the Boxcryptor option and then Encrypted Upload on the confirmation screen that follows. The file will now begin to upload; you'll receive a notification as the process is finishing. You will then be taken back to the file's overview screen once completed.

Encrypted	
Name	Costa Rican Frog.jpg
Type	Image
Location	Dropbox
Size	350.33 KB
Created	7 December 2015
Modified	7 December 2015

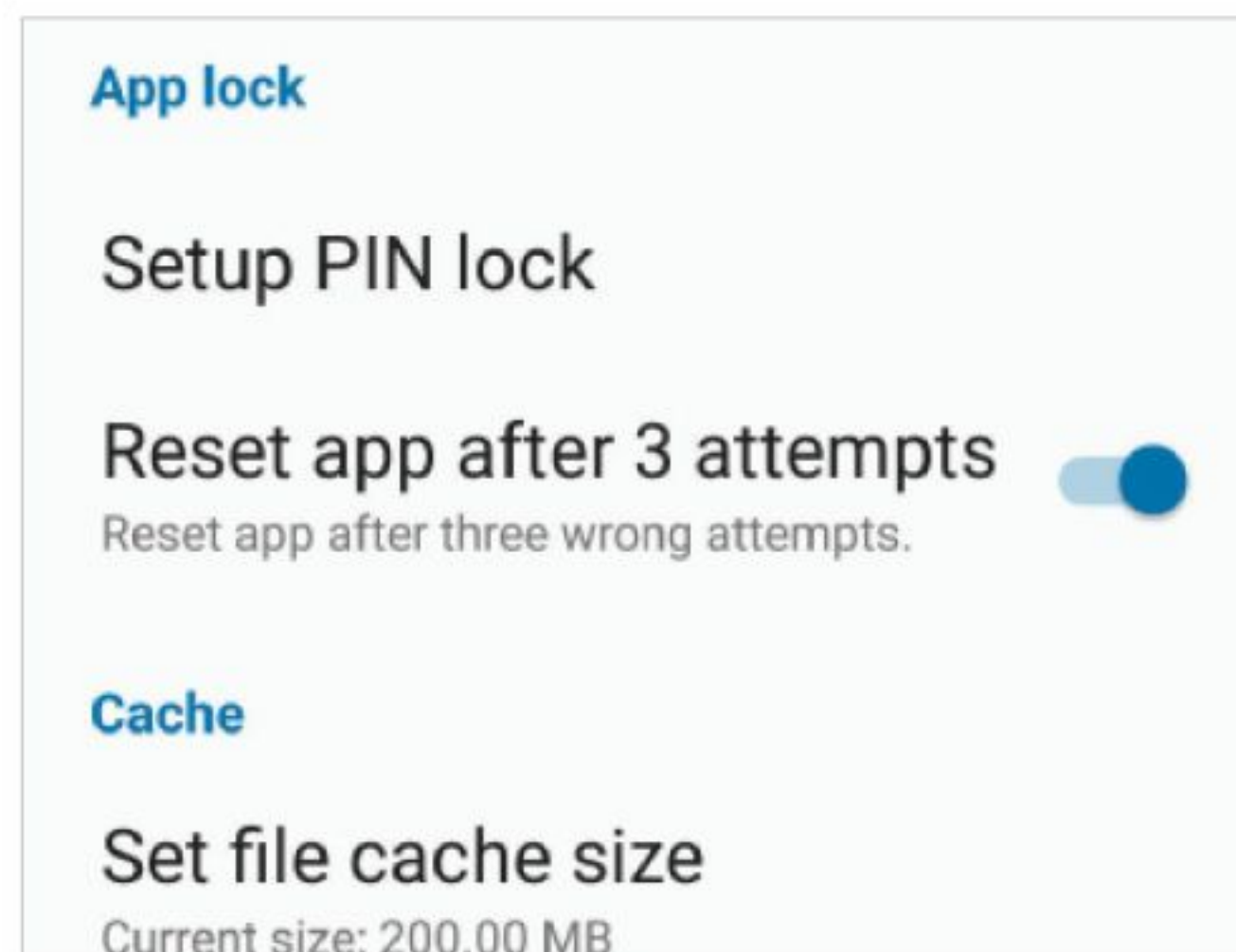
### 7 Did it work?

At first it can be hard to see if your file has been encrypted, but by scrolling down to the bottom of the overview screen there's an easy way to check. Look for the Encrypted tab and make sure the lock is now closed and green, which will indicate that it has been encrypted.



### 8 Encrypt whole account

If you head over to the settings menu within Boxcryptor you'll find the PIN option listed. Use this option to set up an encryption PIN for your account, enabling you to stop unwarranted access to any of your linked accounts. You'll need to enter this PIN when accessing the account yourself.



### 9 Set a limit

The Boxcryptor app will automatically create a cache of all of your encrypted files as a secure backup if you accidentally delete them. However, you can delete this cache if you would prefer to be extra safe and free up some of your device's internal storage.

## faq

Ask your own question online at [littlegreenrobot.co.uk](http://littlegreenrobot.co.uk)

### Can I sync multiple accounts?

Absolutely. Use the Add Provider option to add as many storage accounts as you may own. We would recommend not syncing more than six at a time because it can become difficult to navigate if you have too many files and folders scattered about your app.

### Does Boxcryptor offer encryption for local storage?

While the app has been tailored for cloud-storage encryption, it can also provide basic AES-256 encryption for any locally stored files you may have. You can move these locally stored apps to a cloud account using Boxcryptor, if you see fit.

## Need help?

Got a problem with your Android phone or tablet? Get in touch with us...





App used » Unified Remote Works with » Varies with device

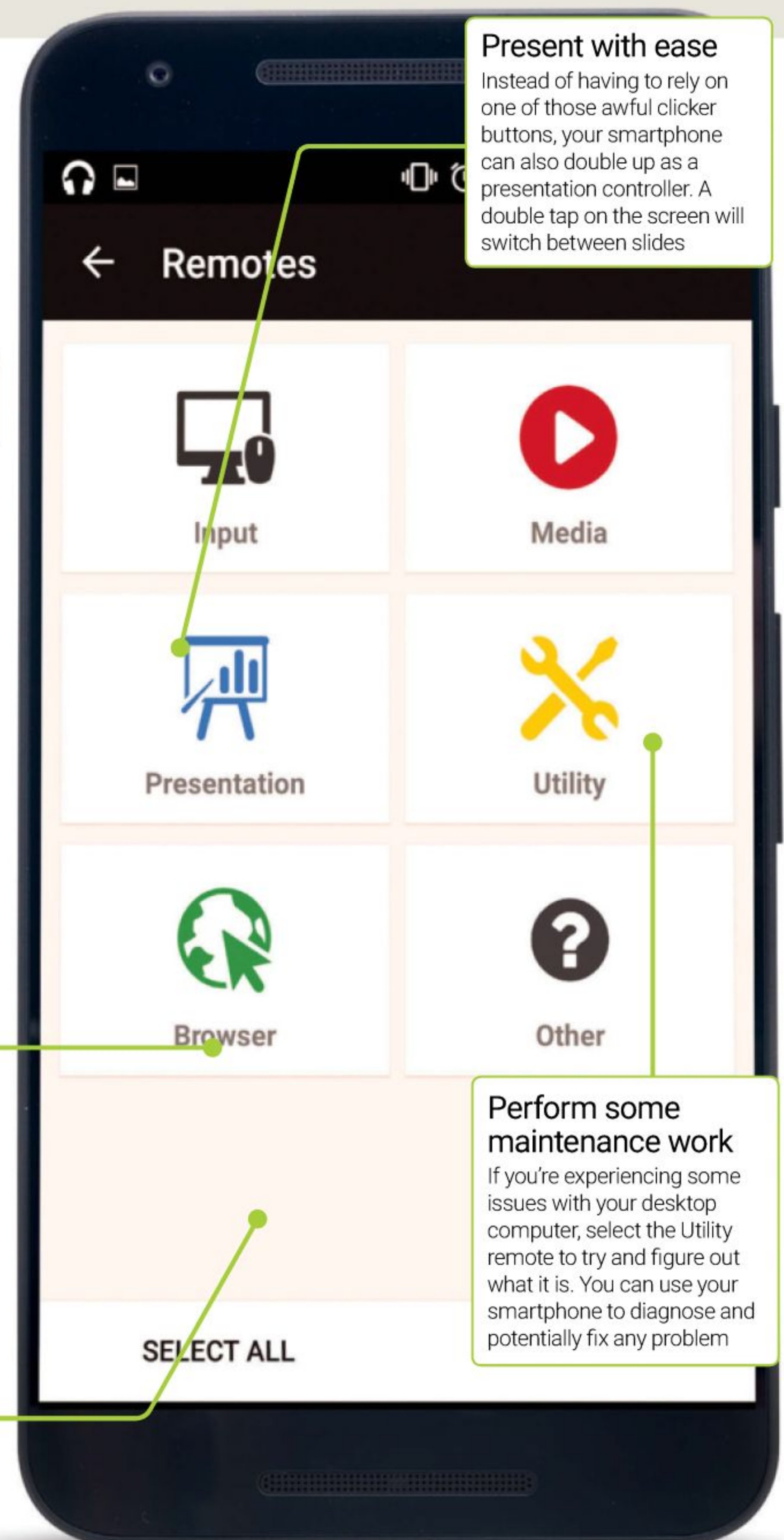
# Control any computer with your phone

Put away the mouse and keyboard and instead reach for your smartphone to control your PC

Your smartphone can be adjusted to complete a whole host of tasks and while at its heart it'll be a device used to communicate with others, we implore you to check out what else it can really do to maximise your use from it. One of the things that we've been having fun with recently is the idea of turning our devices into desktop computer assistants.

The Unified Remote app works with most PC and Mac units, then ports many of their leading features across to your smartphone. Once a connection has been made, you will be able to control each aspect of the computer from your device, without the need for an external mouse or keyboard. Things like controlling a virtual mouse, viewing your screen and controlling media playback are all possible here.

While we're fairly sure you won't be giving up your traditional mouse and keyboard any time soon for this method, it does offer a helpful, fun and startlingly intuitive way of controlling your computer.



## Present with ease

Instead of having to rely on one of those awful clicker buttons, your smartphone can also double up as a presentation controller. A double tap on the screen will switch between slides

## Browse the web

The Browser remote includes tools to help you safely navigate the likes of Chrome and the Dolphin Browser. What's especially cool about this option is that you will find a list of your most visited sites readily included

## Master the basics

Before exploring some of the other features, it's important you get used to using your smartphone as a mouse. At first it can be a little fiddly, but adjusting the sensitivity levels can be advisable to solve this

## Perform some maintenance work

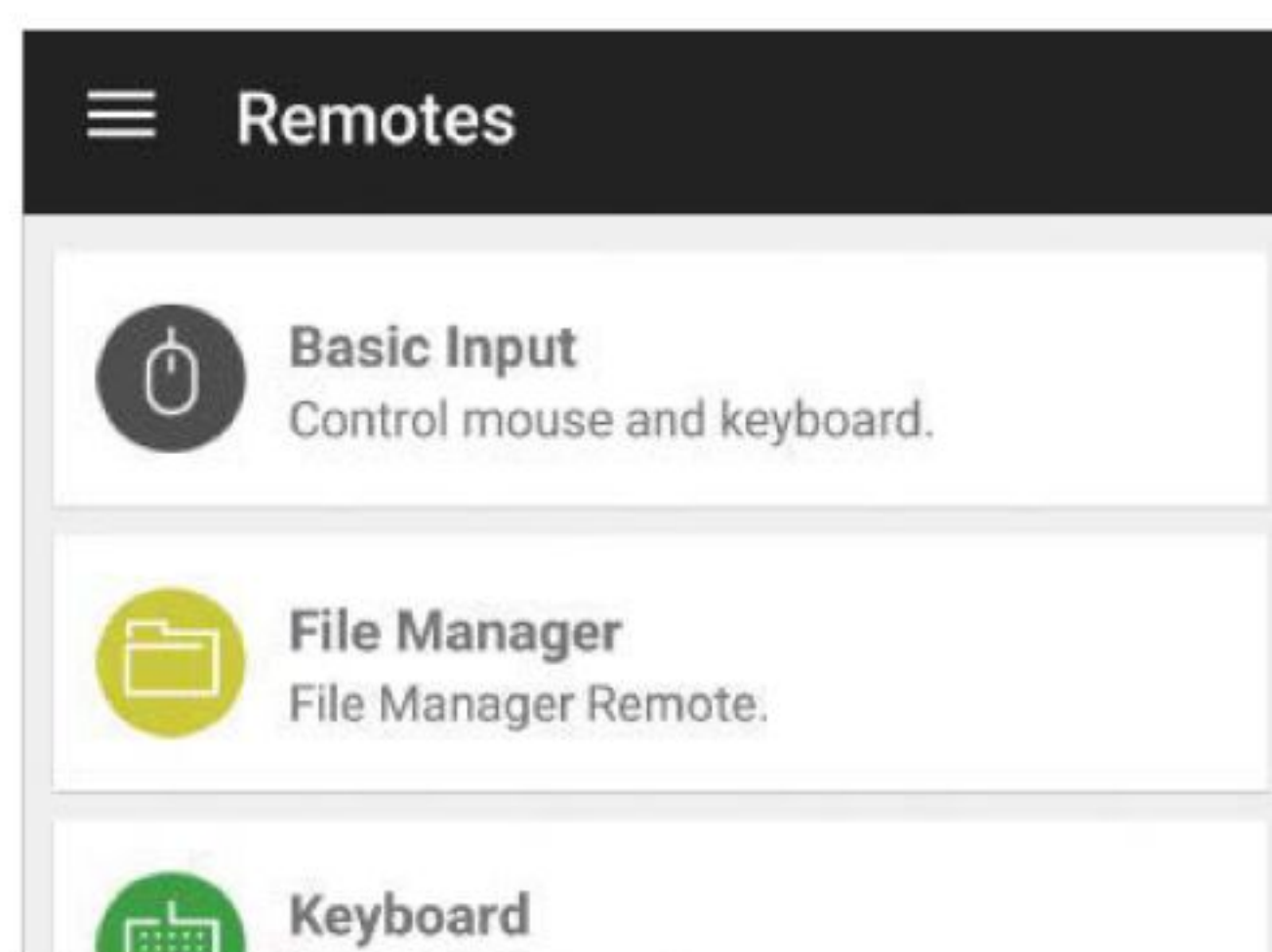
If you're experiencing some issues with your desktop computer, select the Utility remote to try and figure out what it is. You can use your smartphone to diagnose and potentially fix any problem



**Connected to**  
oliver-hill.imagine.pub

## 1 Establish a connection

When you first open the Unified Remote app, you'll be prompted to download the corresponding program for either your PC or Mac. Once finished, you'll be given a brief overview of the app and your connection will be tested to make sure it's strong enough for remote access.



## 2 Explore your remotes

The Remotes screen will give you an overview of all the desktop computer features you can control with your smartphone. We recommend that you familiarise yourself with the basics first of all, so select the Basic Input menu that sits at the top of the list of options.

Use touch to simulate mouse movement:

Tap with one finger to left-click.

Tap with two fingers to right-click.

Drag with two fingers to scroll.

Use pinch to zoom in and out.

Long-press and move to drag.

Tap once to release drag.

## 3 Try it out

Glide your finger across your display and you should find that the on-screen mouse also moves. Tap a finger on your display to open a document or file and pinch two fingers together to zoom in. Have a play around with the other available gestures as they're great fun to try.



## Five apps to get an Android experience on any computer

### 1 Chrome Remote Desktop

A simple solution to connect your Android device with a Chromebook, PC or Mac computer.

### 2 Parallels 2X RDP

Gain access to your home computer in seconds, no matter where you are in the world.

### 3 AppCast for Bluestacks

Beam your favourite Android apps or games directly from your smartphone to a PC or Mac.

### 4 AirDroid

Access and manage all the files stored on your smartphone from any desktop computer.

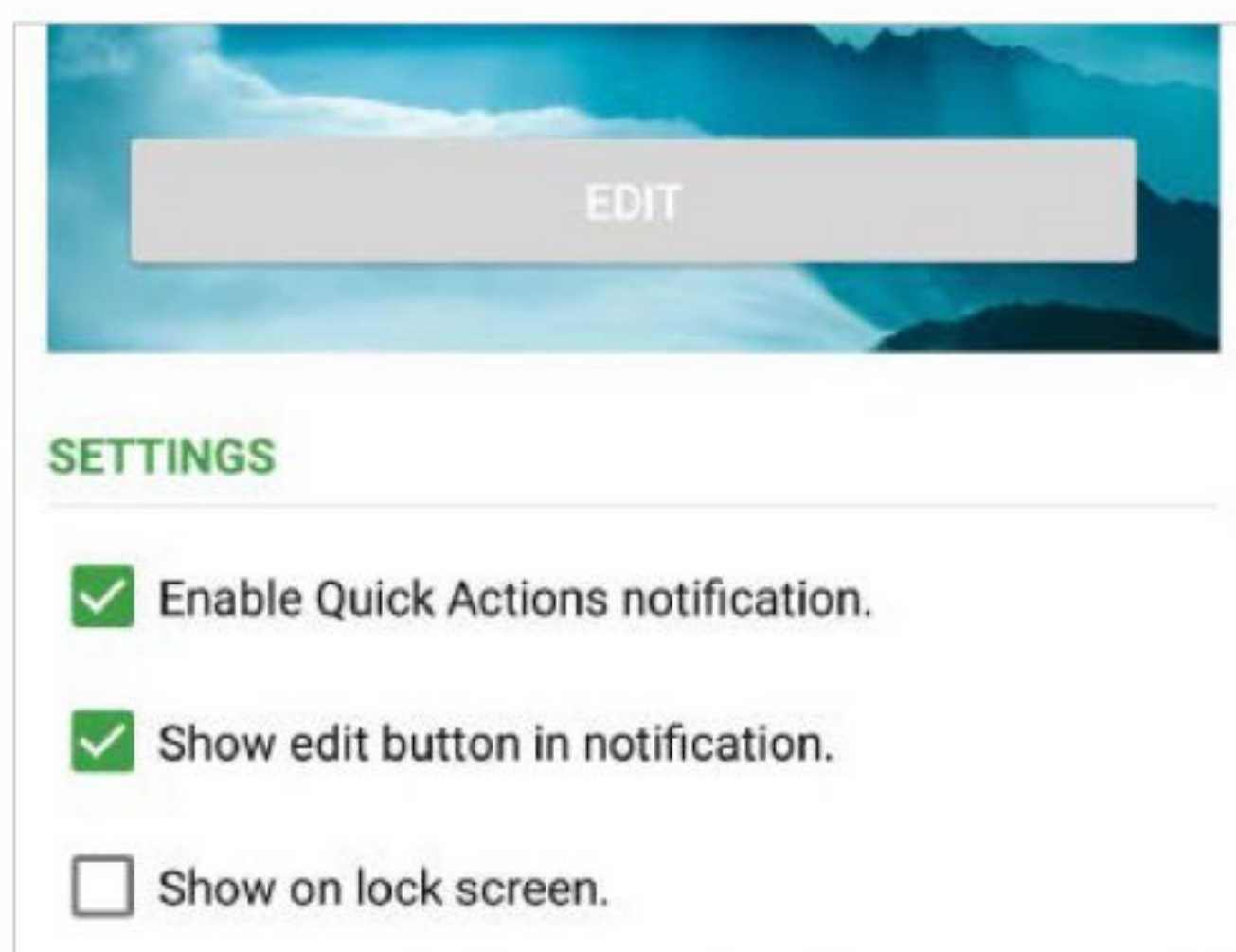
### 5 Splashtop 2

Stream your favourite stored films on your Android device on to multiple PCs simultaneously.



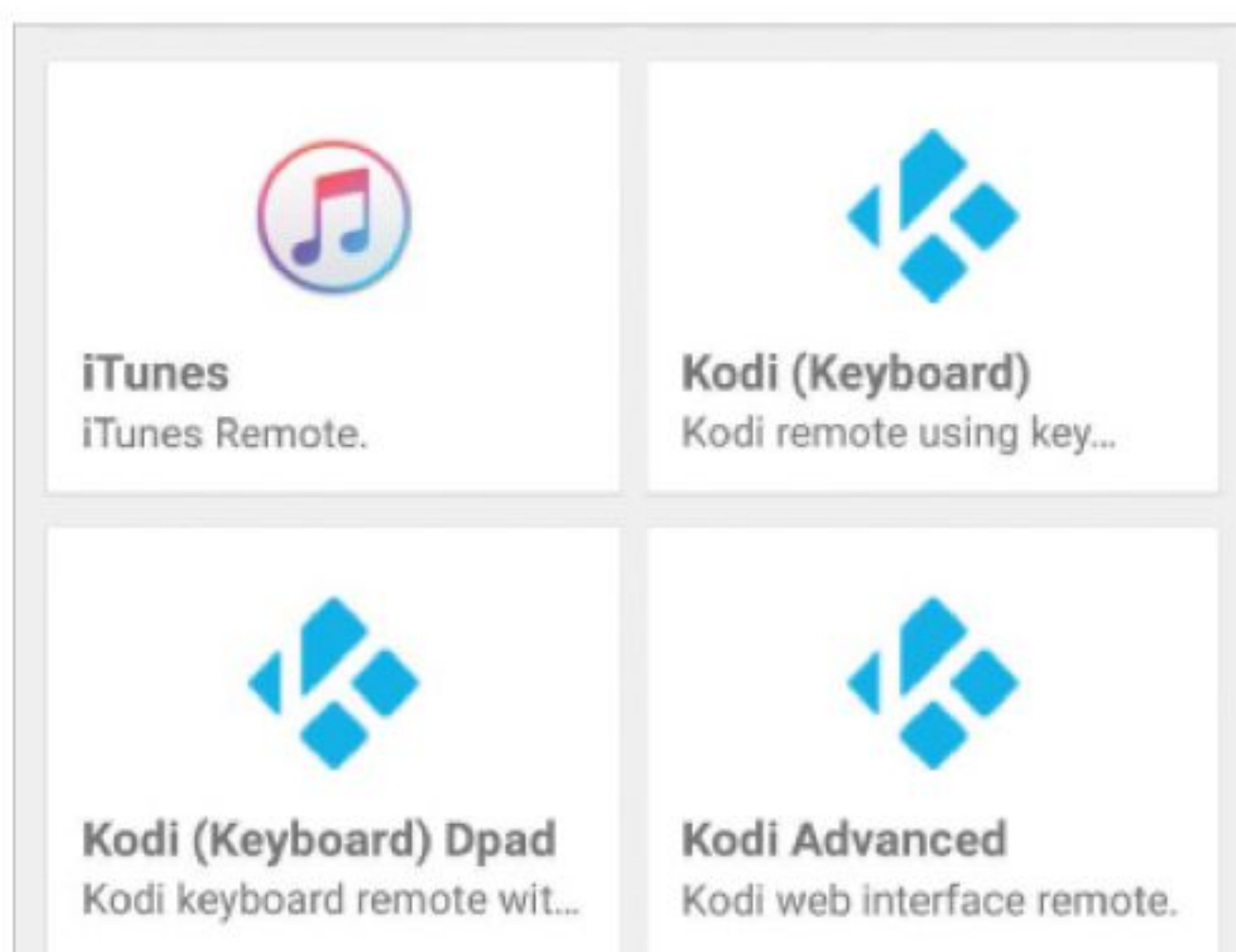
### 4 Switch commands

The rest of the basic inputs can be found at the bottom via icons. Select the keyboard option that's provided to access a full QWERTY set up. Turn your phone to landscape mode and you'll have an authentic typing experience for creating documents and searching the web.



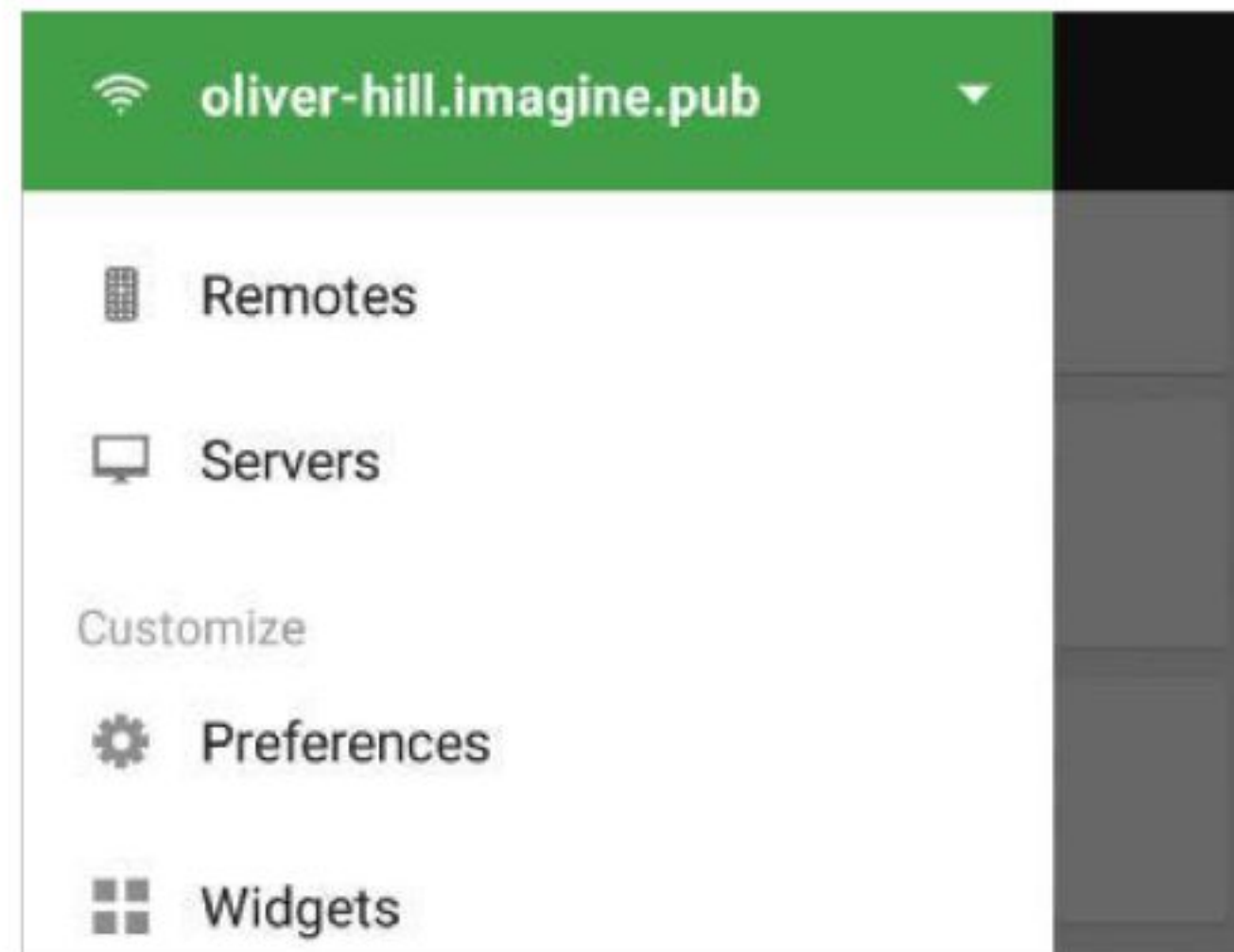
### 6 Set up quick actions

Press on the edit button located on the Quick Actions menu. From here you can choose the settings and features that you can immediately access on your device's notification tray. Once done, press on the confirm button that will be shown to finalise your choices.



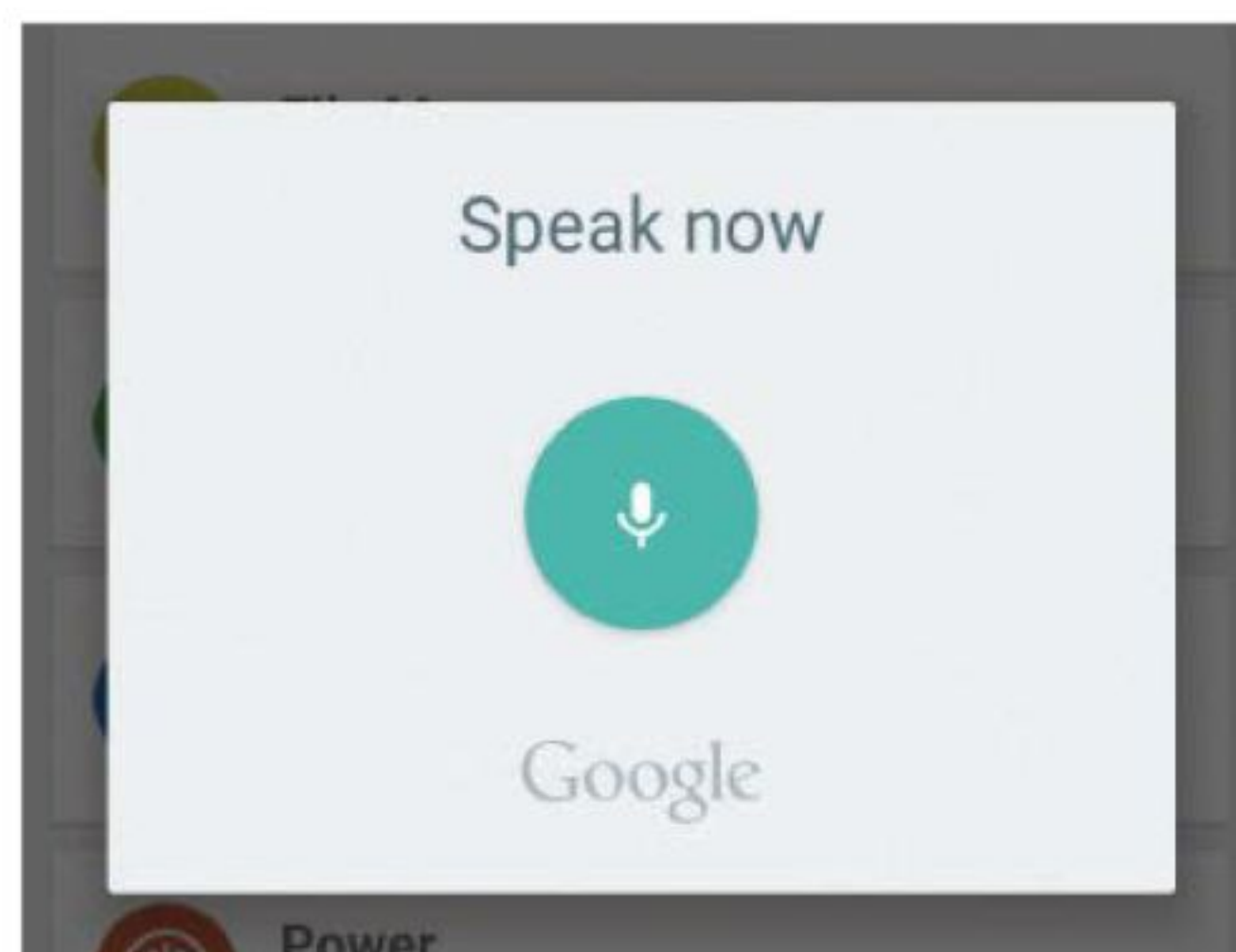
### 8 Add new features

Back out of the Remotes section and select Media. This will include the details of an array of websites and plugins that are compatible with both your PC and Unified Remote app. Press on any of them to add that app or feature to your list of Remotes.



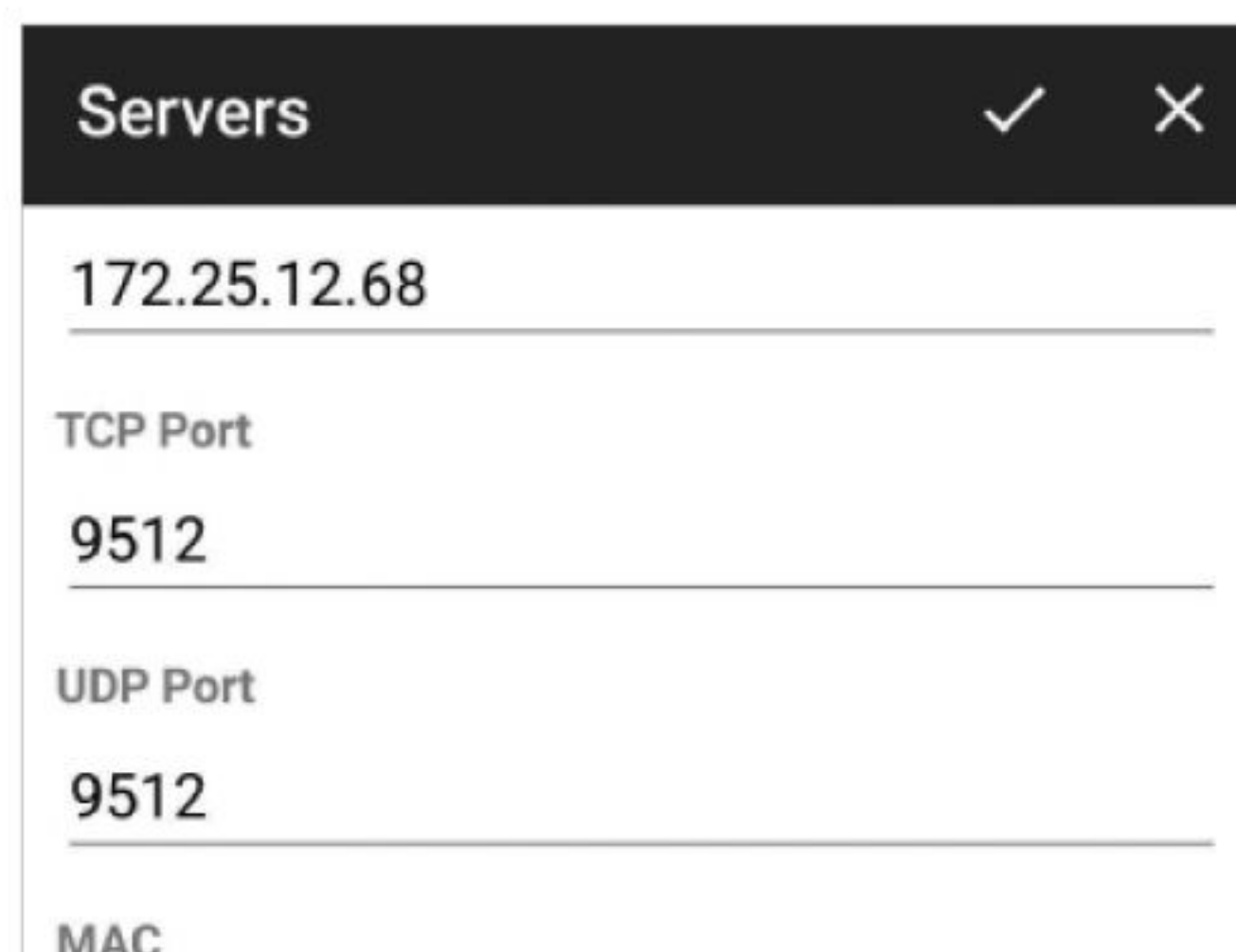
### 5 Open the side menu

Once you're done checking these features out, head back to the homescreen and press the menu icon located in the top left of the app. This will open the app's side menu that includes a plethora of extra options worth exploring. For now, select the Quick Actions menu.



### 7 Use your voice

Open the side menu a second time and select the Remotes option. Now select the microphone icon on the bottom right. Users can perform searches on their desktop computer using their voice. It's ideal for searching out pesky documents or trawling through media files.



### 9 Improve your connection

If you notice any lag while using Unified Remote on your desktop computer, you may need to reconfigure the connection. Open the side menu within the app and select the Servers option. From here, select your computer and go through the various details within.

## faq

Ask your own question online at [littlegreenrobot.co.uk](http://littlegreenrobot.co.uk)

### What about if I own a Linux computer?

You'll find that the necessary server for Unified Remote also has a download for Linux. The feature base doesn't seem to be as big as what you'll find for a PC or Mac, but it's still certainly worth checking out.

### Can I connect to multiple devices?

Yes. If you happen to own multiple computers, you'll want to use the Servers screen within the app to both connect and switch between the different devices in your home.

## Need help?

Got a problem with your Android phone or tablet? Get in touch with us...

**facebook**  
/littlegreenrobot  
Get help from our Facebook community

**twitter**  
@lgrobot

Follow us to send your questions and thoughts

**email**  
[qa@littlegreenrobot.co.uk](mailto:qa@littlegreenrobot.co.uk)  
Send your questions for our team of experts to tackle



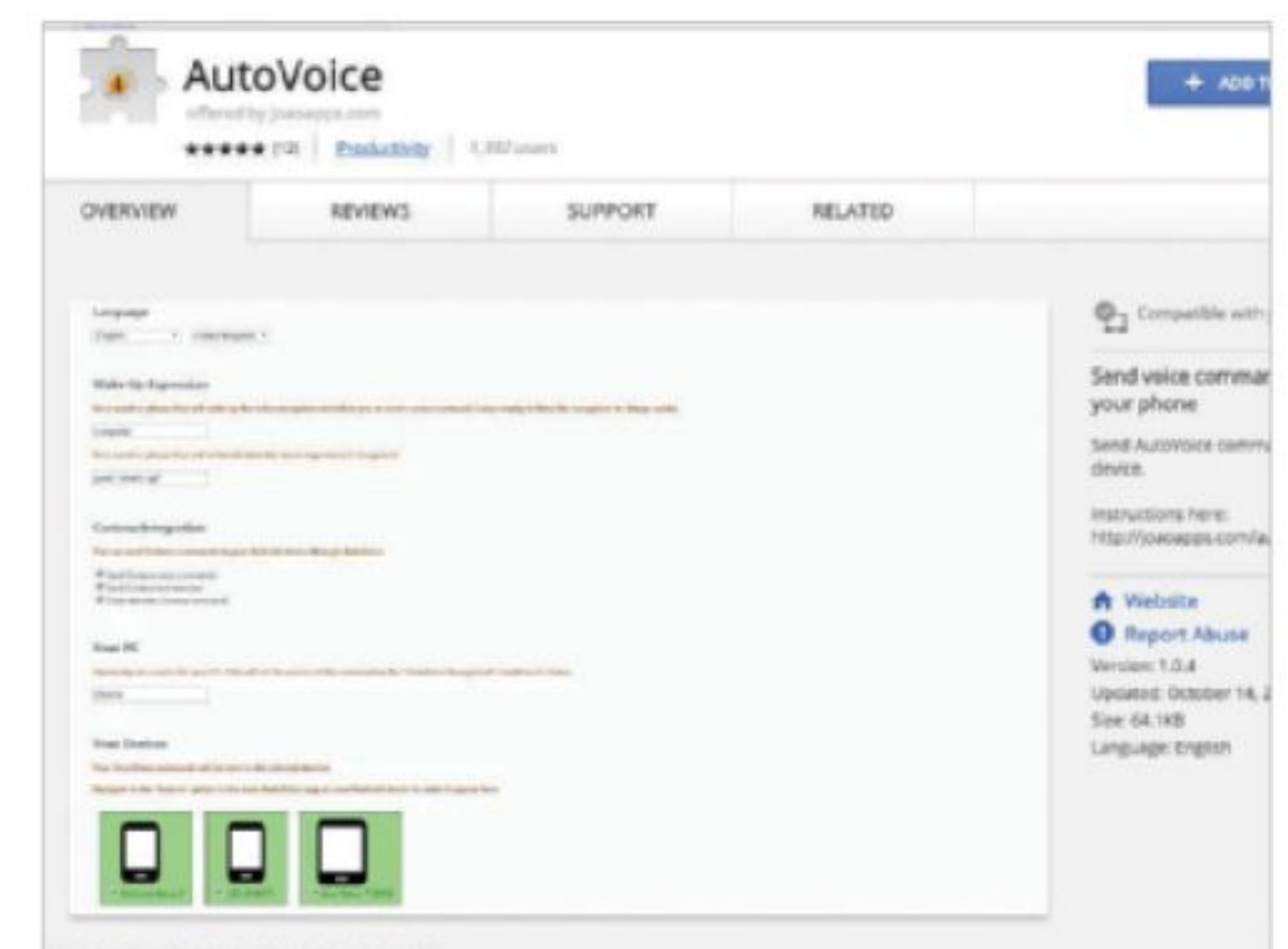
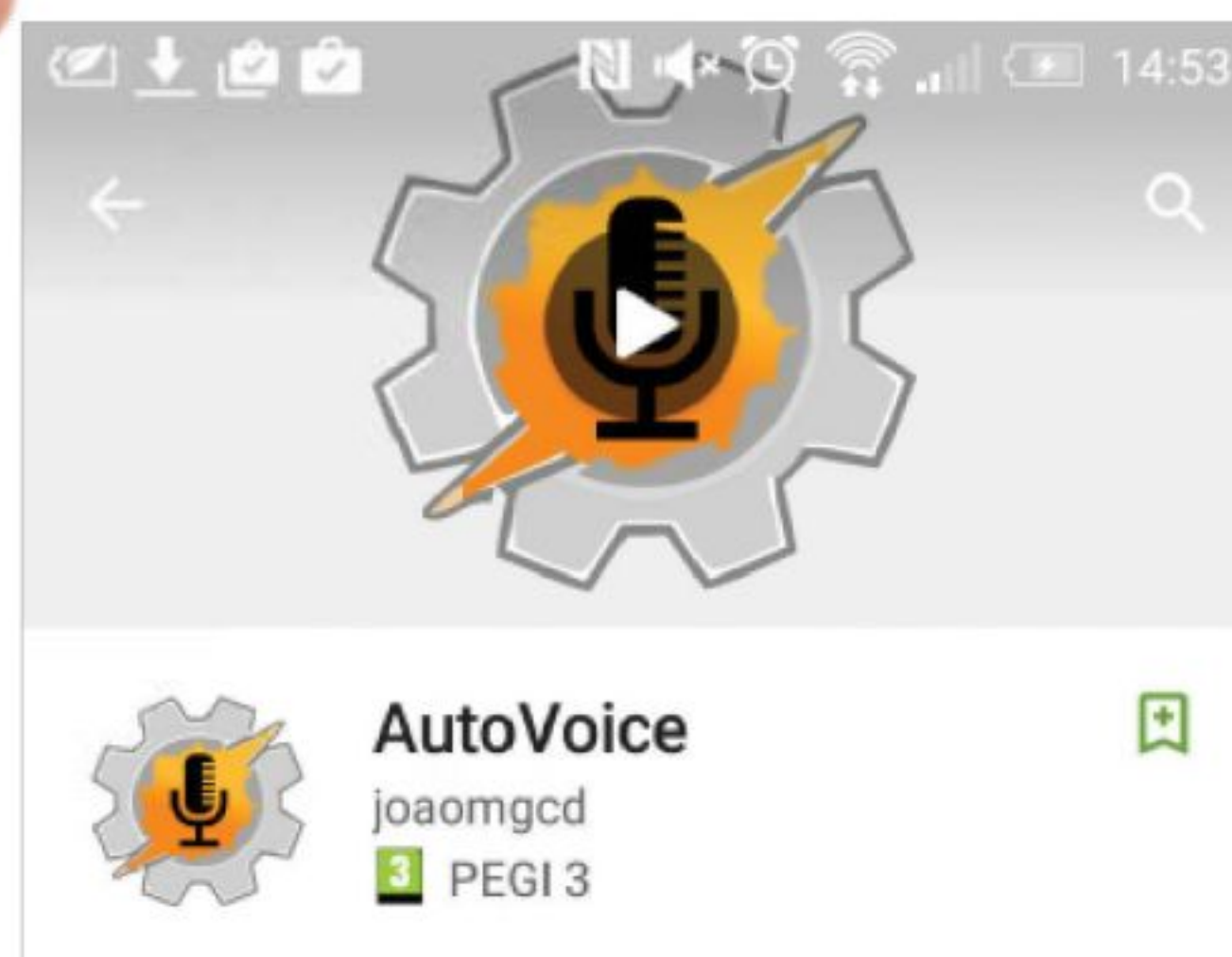
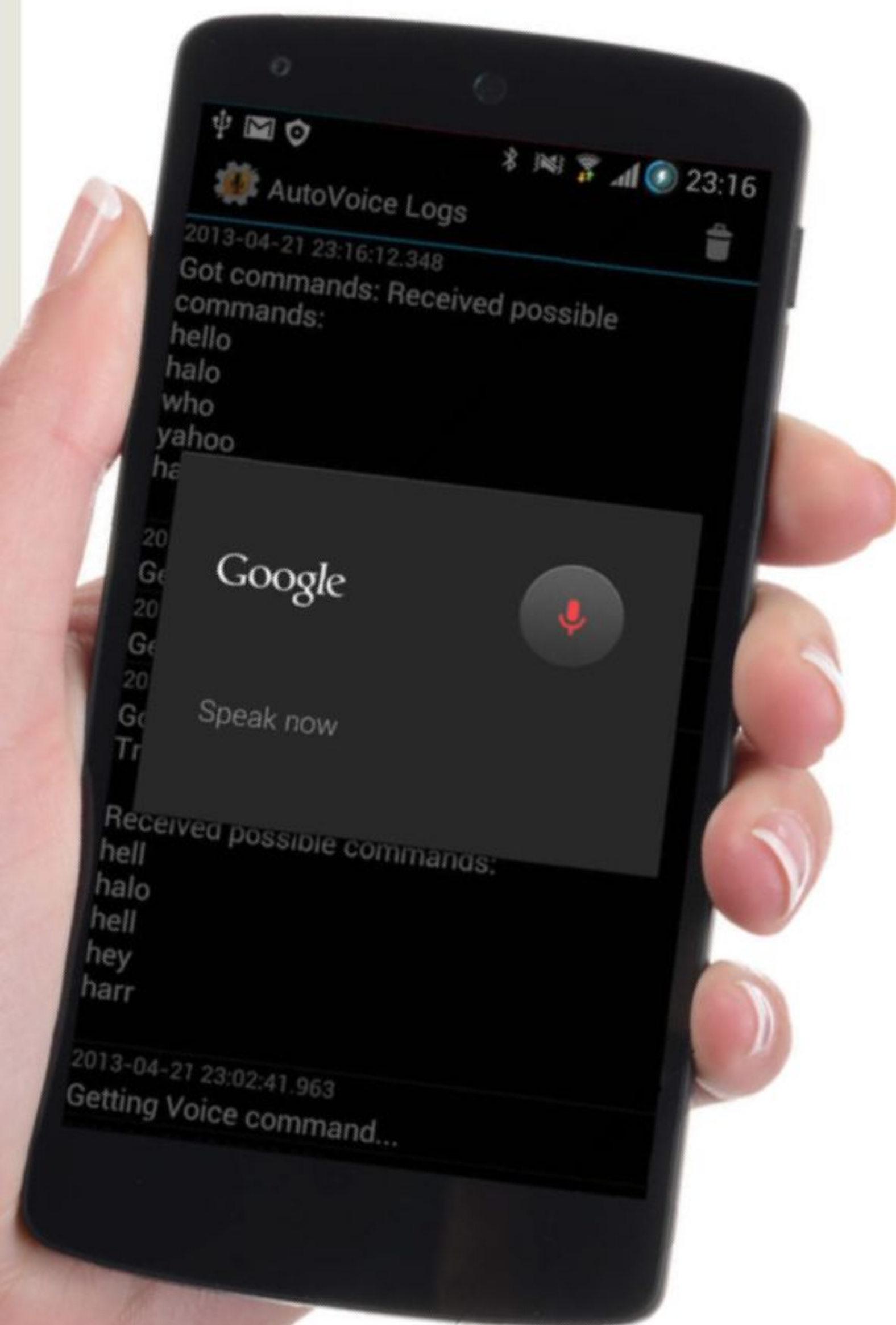
App used >> AutoVoice and Tasker Works with >> Varies with device

# Use your voice to control your devices

Speak to your PC and use the AutoVoice Chrome extension to perform actions on your Android device

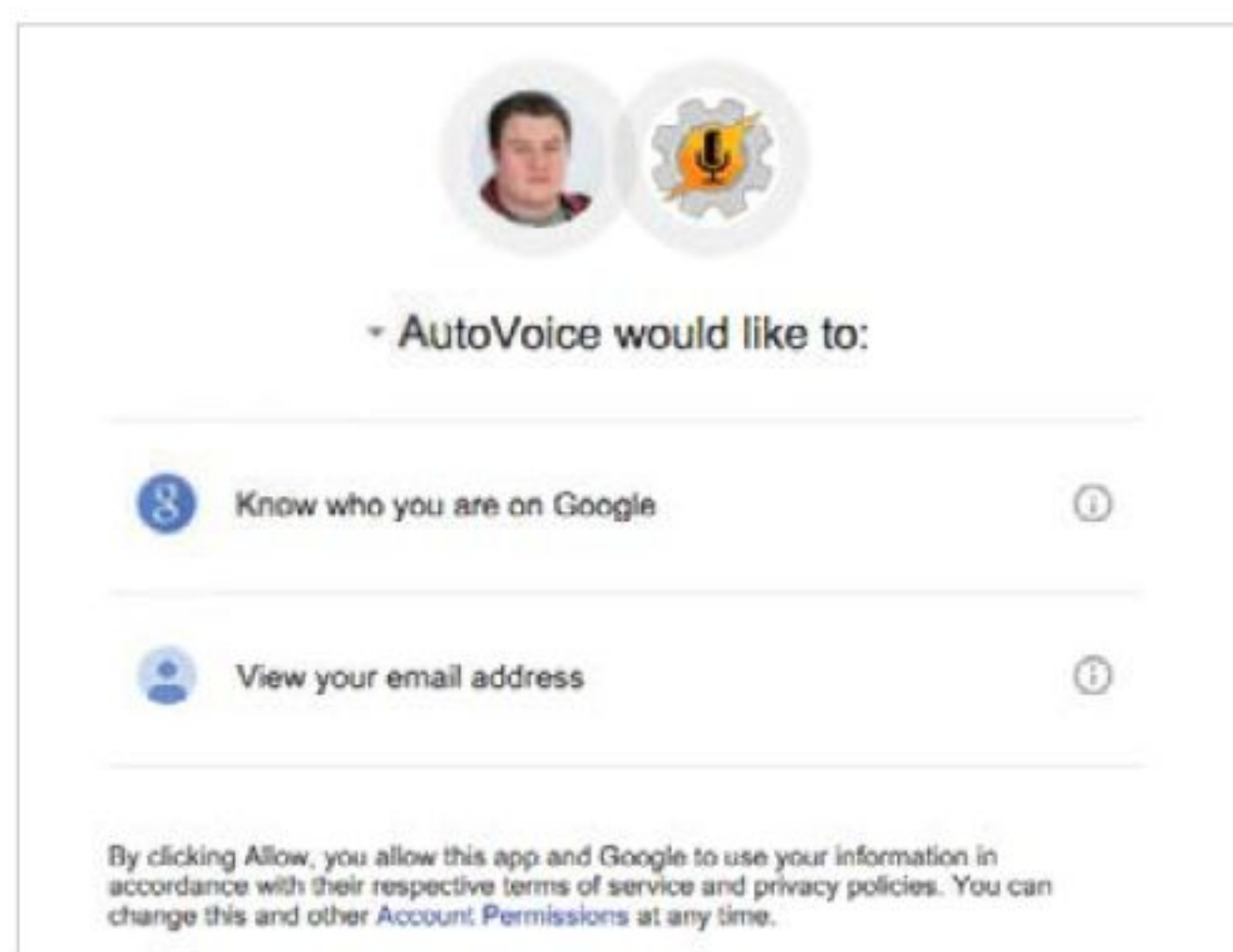
**AutoVoice and Tasker have enabled you to use voice commands on your Android device for a while now, but a newly released Chrome extension from the same developer takes things one step further.** Instead of talking to your phone you can talk to your PC or Mac and the extension will perform the action on your Android device. It takes some setting up and you'll need about an hour or so to get everything working properly, but once that's done you'll find

yourself using it quite often. There are a couple of apps you'll need to download, as well as installing the extension from the Chrome Webstore on your Mac or PC. There are some slightly technical bits of the tutorial, so if you're not familiar with Tasker or AutoVoice, it's best to get comfortable with how they work before you jump in. If you've got your Android device, a PC or Mac nearby and you have a chunk of time on your hands, then you're ready to go.

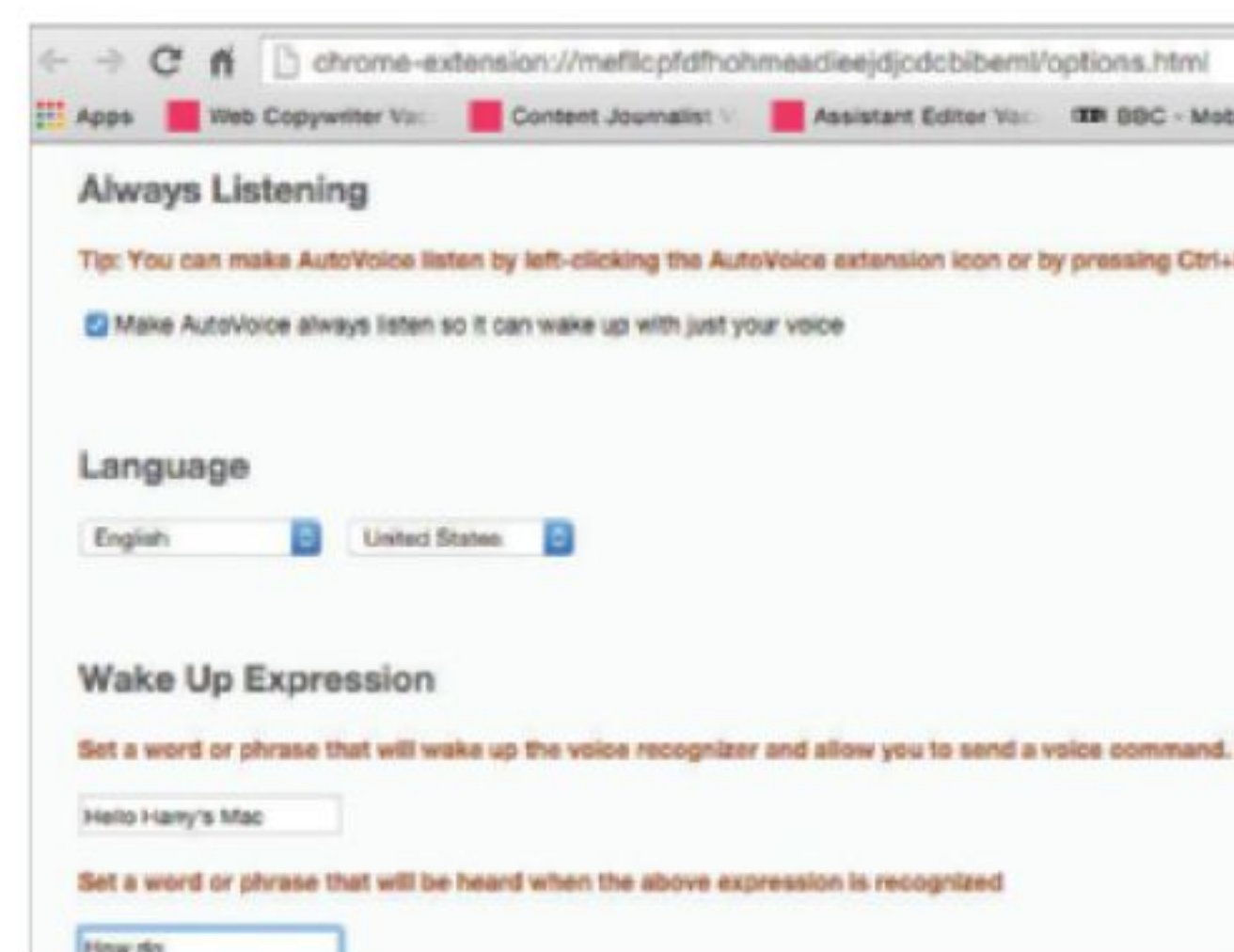


**1 Time to get downloading**  
First up you're going to need to download and install Tasker from the Google Play store. It's free to download and it shouldn't take too long. You're also going to need to grab the AutoVoice extension from the Play store as well. Again it shouldn't take too long.

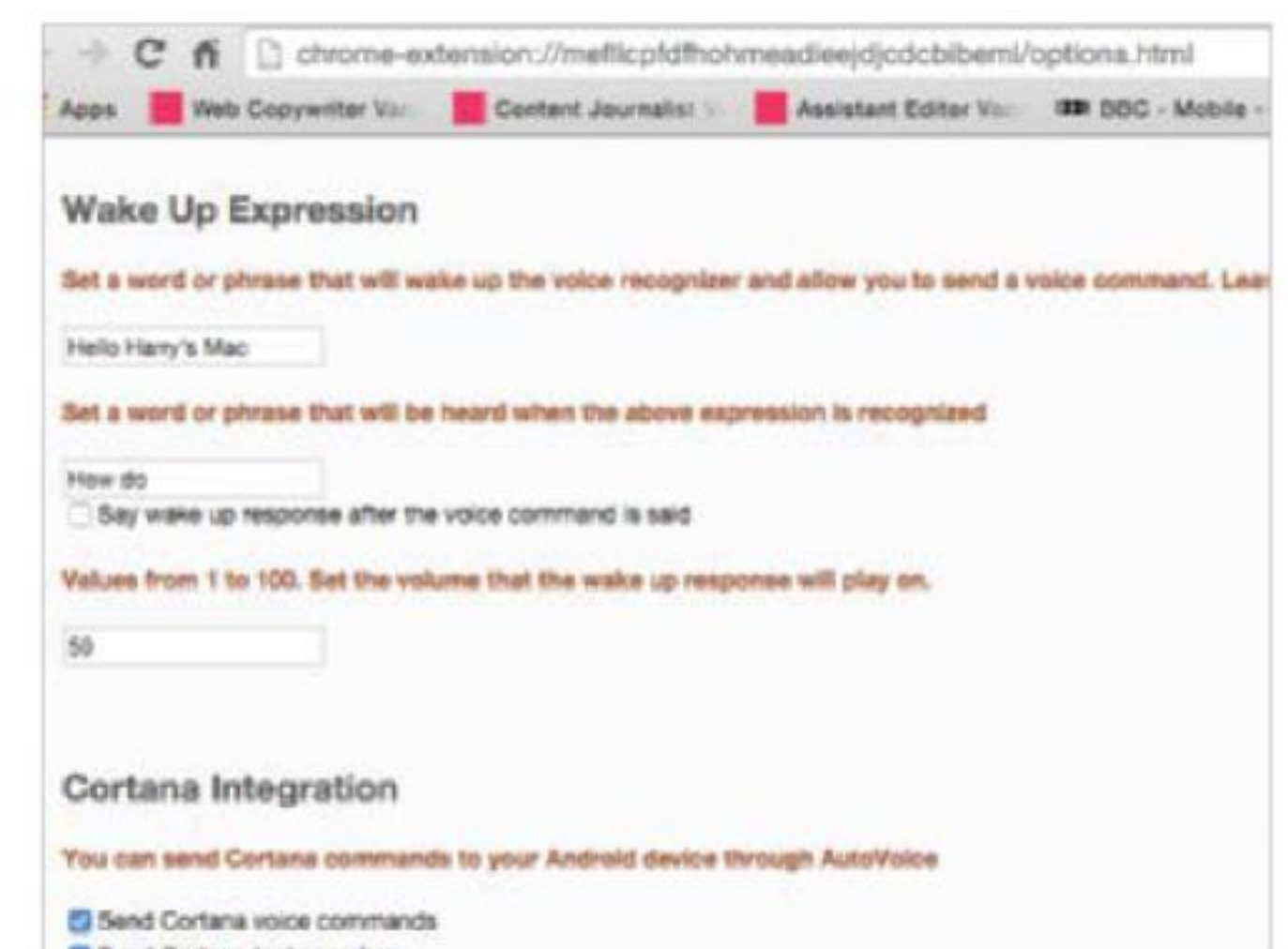
**2 Head to your computer**  
Now it's time to set up the AutoVoice extension on your PC. You'll need to go to the Chrome Webstore and search for AutoVoice where it'll be among the top results. Download and install the extension on your computer. You'll get a new icon next to your search bar when it's done.



**3 Choose your account**  
Next you'll need to choose which account you want to use AutoVoice with. Make sure it's the same Google account that you're going to be using on your phone otherwise none of this is going to work. Click to permit the extension access to the things it needs to work properly.



**4 Right click the extension**  
Right click on the extension icon and select the Options menu. Here you need to set a phrase to wake up the extension; you can also set a reply as well to show that the extension has heard. We'd recommend dropping the volume down on that as it can be quite loud.



**5 Give it a name**  
It's also worth giving your computer an easily recognisable name as this will make creating recipes in the mobile app an awful lot easier. By default it's set to be called Chrome, so give it a snappier name that's simpler to quickly pick out of a list, and save the changes.



**1 Speak clearly**  
Depending on your chosen phrase, the extension might have problems picking you up every time.

**2 If in doubt, swap out**  
If it's not working, change the phrase to something the extension will be better at understanding.

**3 Use other languages**  
The extension understands multiple different languages so you don't need to stick to English.

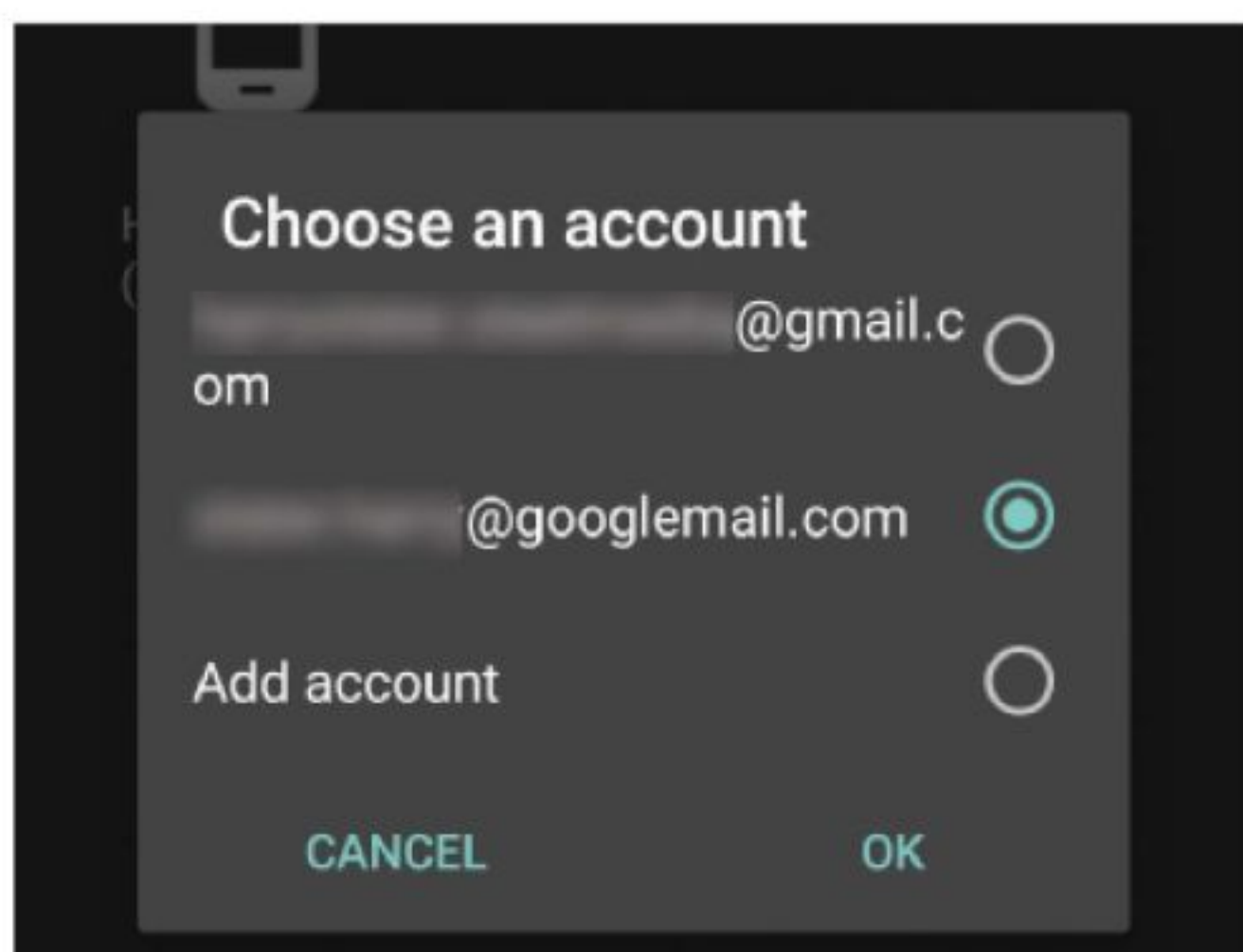
**4 If you're stuck**  
You can browse examples in the Tasker menu to help you understand what to do.

**5 If you're still stuck**  
Tap the question mark in the bottom-right corner of the app for more detailed help.



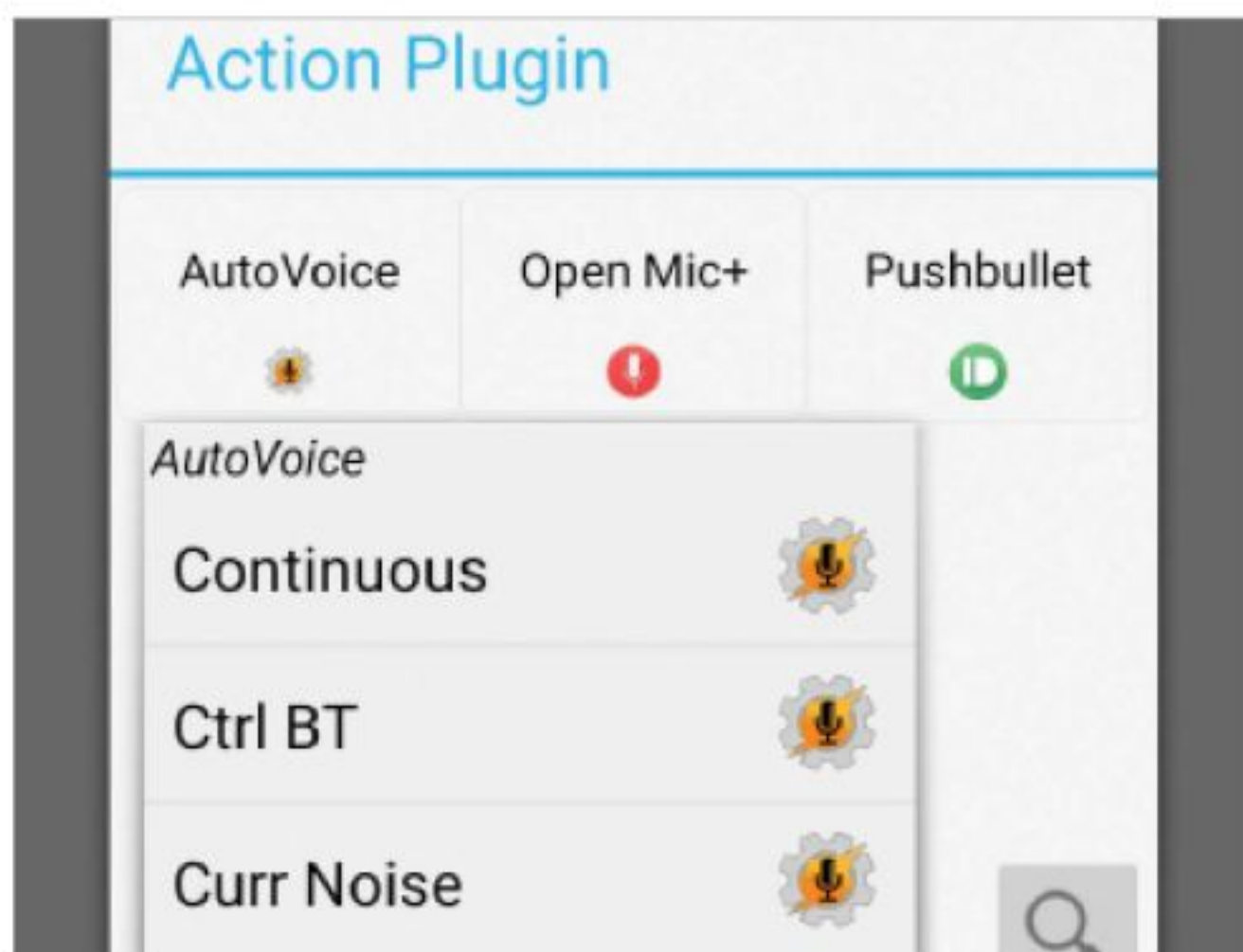
### 6 Back to your phone

Now head back to your phone and set up AutoVoice there. You'll need to enable Google Now integration from the Settings menu first, then follow the instructions on screen. This will take you to the Settings menu of your phone, where you can give AutoVoice access to the microphone.



### 7 Check your devices

Now go to the remote devices section and check that you're signed in with the correct Google account. Tap the icon in the top-right corner to get everything set up. Remember the only remote device will be your phone so you won't be able to control your PC using your mobile.



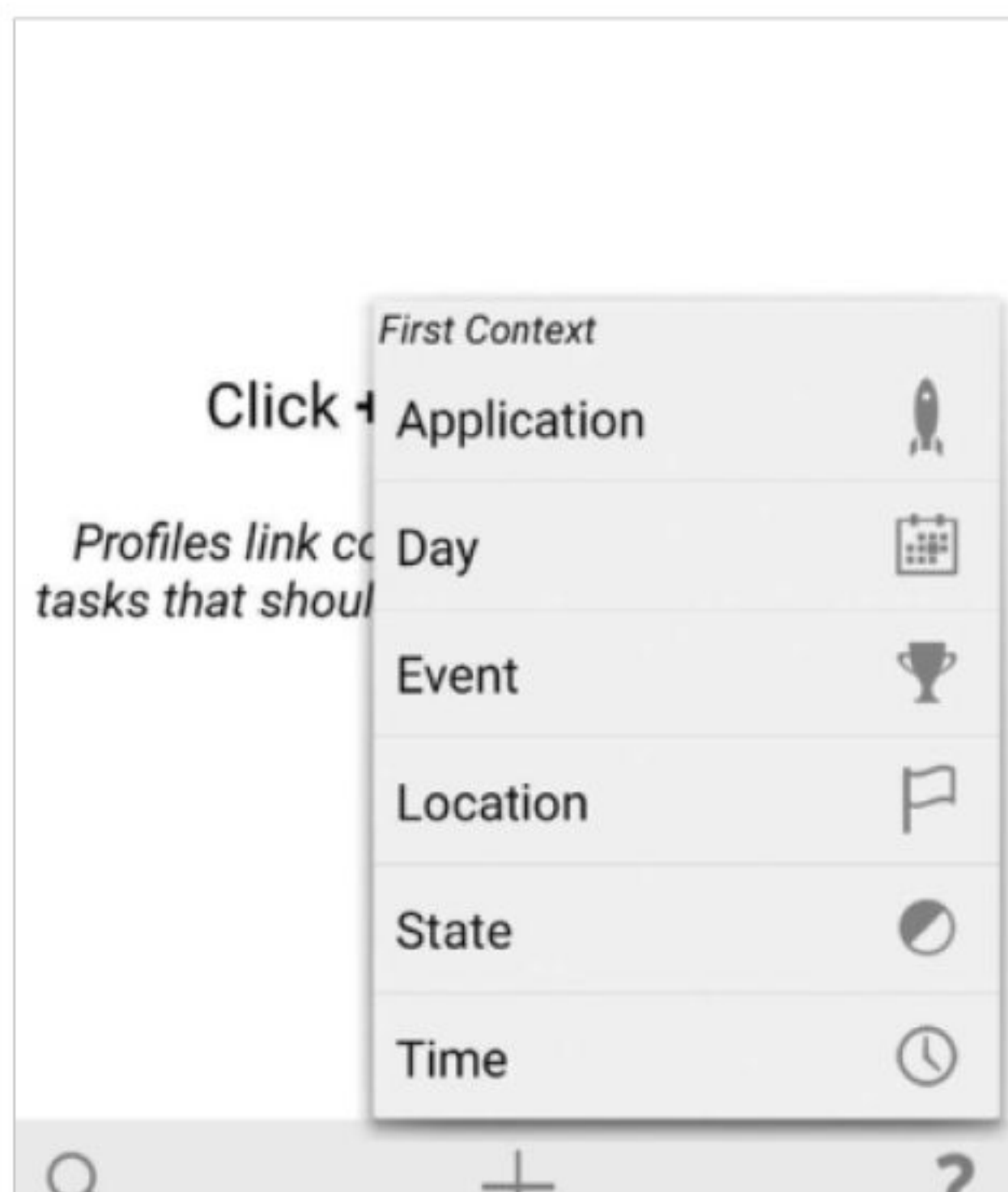
### 8 Set up Tasker

Now it's time to get things rolling in Tasker. Tap the button marked Use AutoVoice in Tasker near the bottom of the menu, this will open Tasker and let you create an AutoVoice command in the app. We'll cover what you need to know about that in the next section.



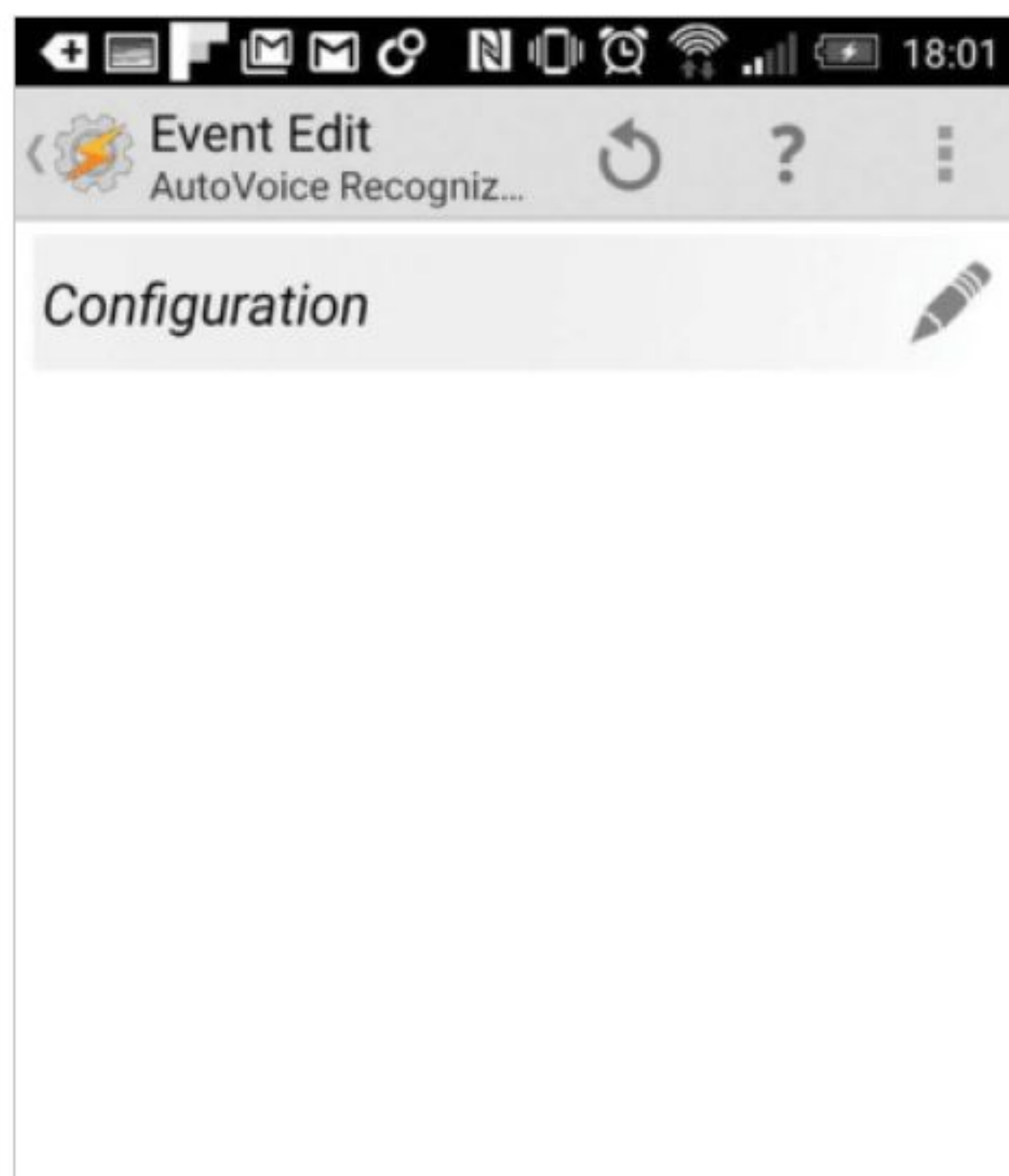
## How to set up a PC voice command

Now that you've set up your accounts, you can write voice commands for your PC



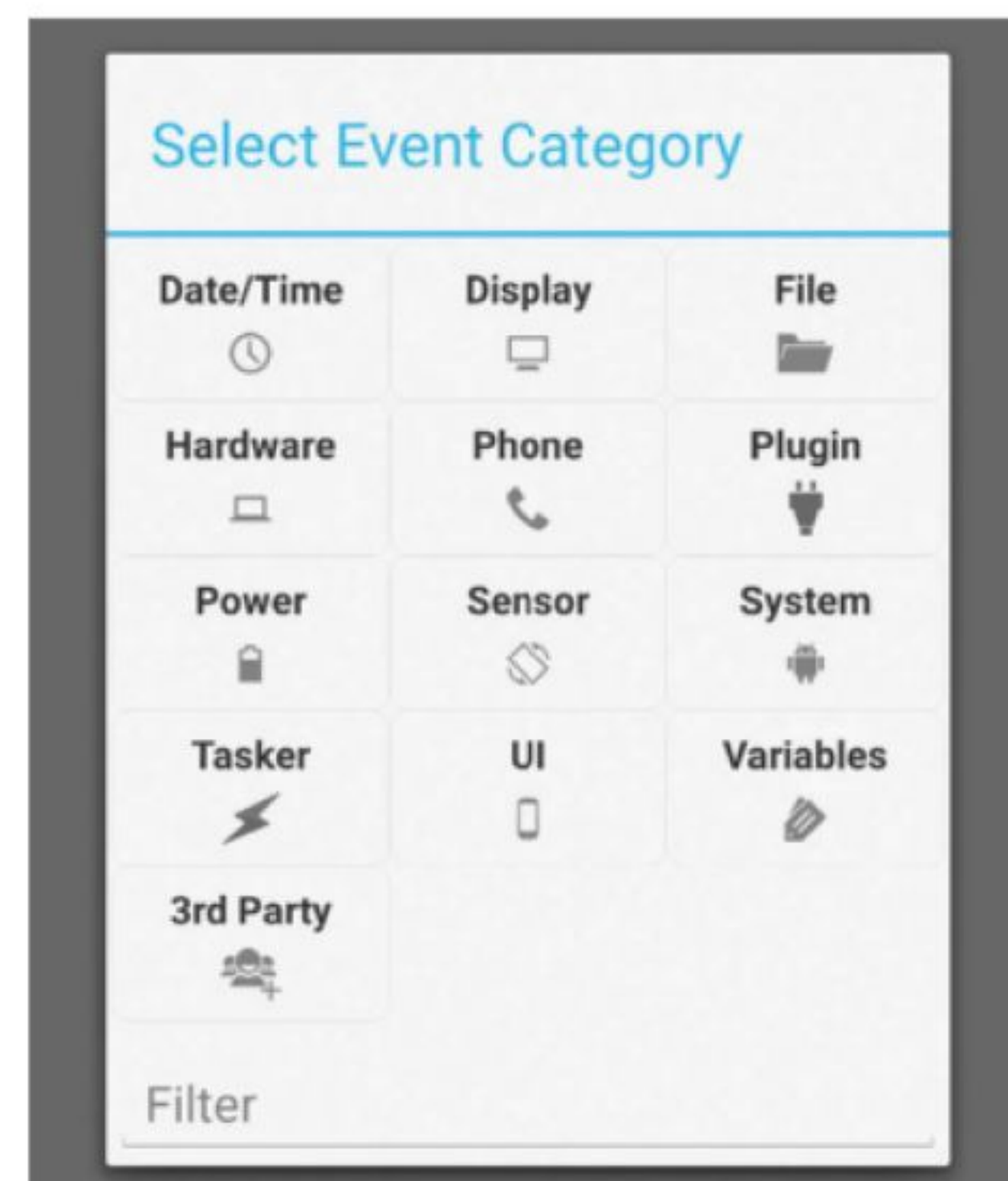
### 1 Learn the ropes

First set up a Tasker profile. Fortunately it's not a complicated process so instead we're only going to walk you through the steps to create a voice command from your PC. There are a number of official tutorials that will help with the profile if you get stuck.



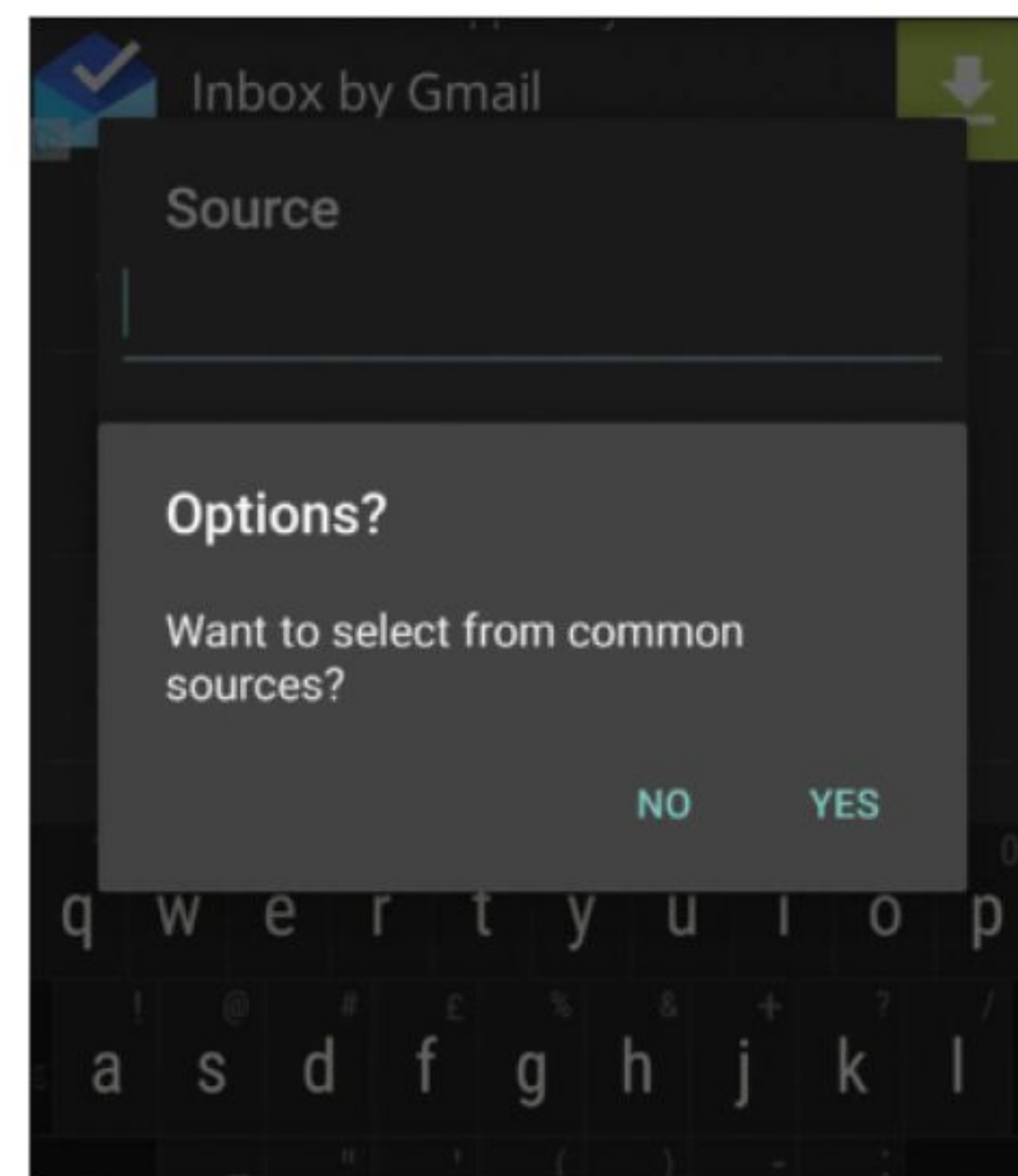
### 3 Change the configuration

The configuration screen is where you need to change things. You'll need to make these changes if you want to save your new Profile so make sure you get this bit right or your profile could disappear. Tap the pencil icon next to the word Configuration and you'll be taken to the AutoVoice settings menu.



### 2 Choose the plug in

When you start your profile, choose Plugin from the menu, where you'll be able to choose which extension you want to use. Pick AutoVoice then from the drop-down menu that appears choose AutoVoice Recognize. Once you've selected it, the app will create a profile.



### 4 Make the change

Scroll down the menu. Here you'll see an option marked Source. Tap it and when you're asked if you want to choose from your common sources, tap Yes. Scroll down the list that appears where you should see the name of your PC. If not, then select Chrome from the very bottom of the list.



From the makers of **Android** magazine



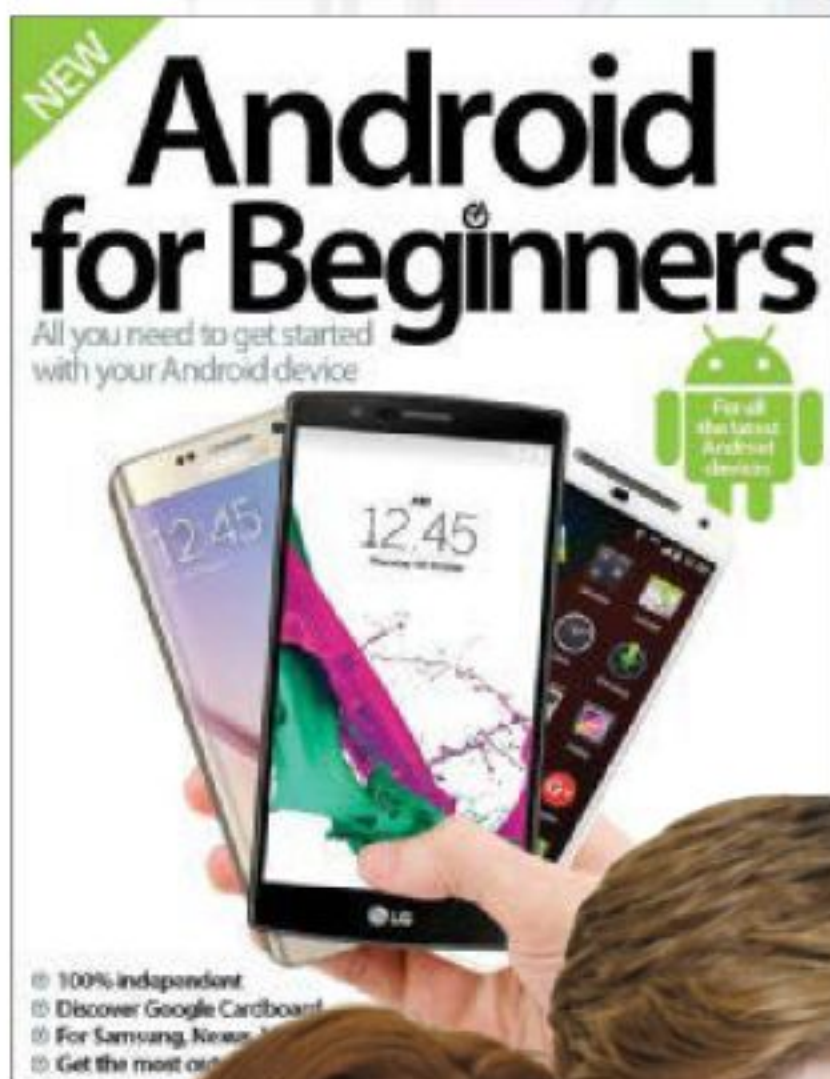
# android

## Tips, Tricks, Apps & Hacks

Unleash the power of your Android device. Whether it's a smartphone or a tablet, Android Tips, Tricks, Apps & Hacks is suitable for all Android devices. Download essential apps and improve the performance and security of your device.



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## Jargon Buster

Get up to speed with all the terms you will need to know when it comes to hacking your phone

### OS

Short for operating system. Often the Android ROM will be referred to as the OS – this just means the system files on the Android device that make up your user experience, and is similar to Windows, Mac OS X or Ubuntu on a desktop computer.

### ROM

Stands for read-only memory. In the context of Android, the ROM refers to all the files that make up the operating system that is installed on your device. Gaining root privileges allows for replacement of the standard ROM with a custom one.

### Root

Rooting your phone gives apps access to parts of the OS that are normally hidden from consumers. This enables you to run more powerful software and install custom ROMs on your phone.

### ROM Manager

An app available from the Android Market that enables you to install a whole new version of your OS with a single click. It requires a rooted phone to use and is ideal for those new on the scene.

### Titanium Backup

This app from Google Play enables you to back up everything on your phone – apps, data, settings and all. It means that you can restore your phone to how it was, even after you've updated or changed the ROM.

### Unrevoked

Available from [unrevoked.com](http://unrevoked.com), this is a one-click tool that can be used for rooting many popular HTC smartphones.

### ADB

Stands for Android Debug Bridge. ADB is mainly used for software development, but it also has some uses for hacking your phone. It can be used to push files onto the system folder, for instance.

### Nandroid

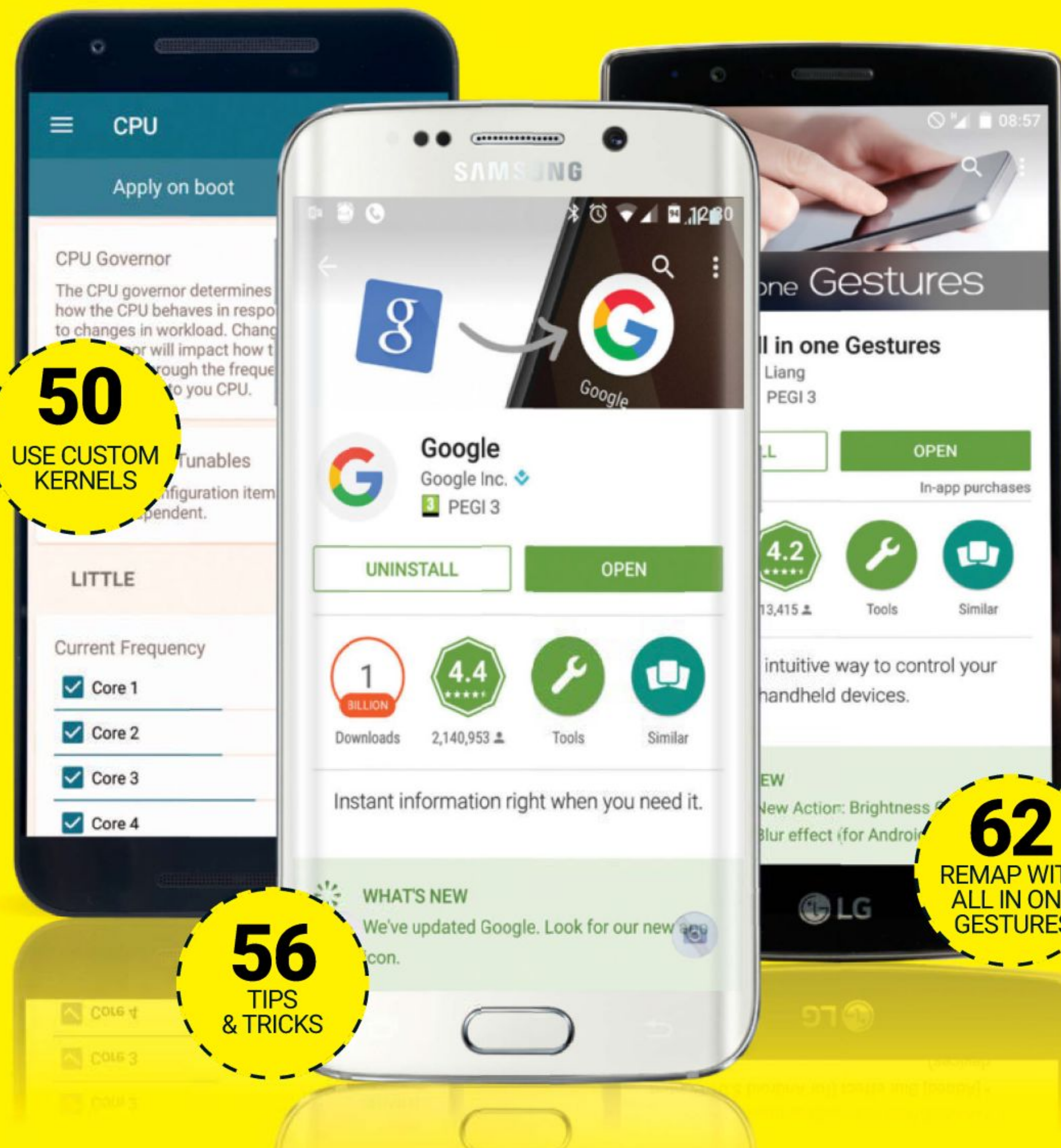
You might come across the phrase perform a Nandroid backup. This means using a custom recovery tool to make a back-up image of everything currently on your phone: OS, apps, data etc. It's very useful should you wish to restore your phone to its previous state later.

### Radio

'Radio' refers to the software on your Android device that deals with making phone calls and data connections. Updating your radio version can bring better battery life and signal strength to your device. Some ROMs require the latest radio.

### Flash

The storage in your device comprises flash memory, which is a type of solid-state storage. The terms to flash or flashing mean installing some new software onto your device's storage.



### 50 Enhance your device with custom kernels

Community developed kernels can enhance device performance

### 56 Hacking Tips & Tricks

Essential hacking advice, including how to control functions in Marshmallow

### 58 Create your own Xposed module

Love the Xposed framework? Use Android Studio to make your own

### 60 Make Android Wear work with iOS

Make your Android Wear device work with an iPhone

### 61 Convert a ZUK Z1 to use Cyanogen OS

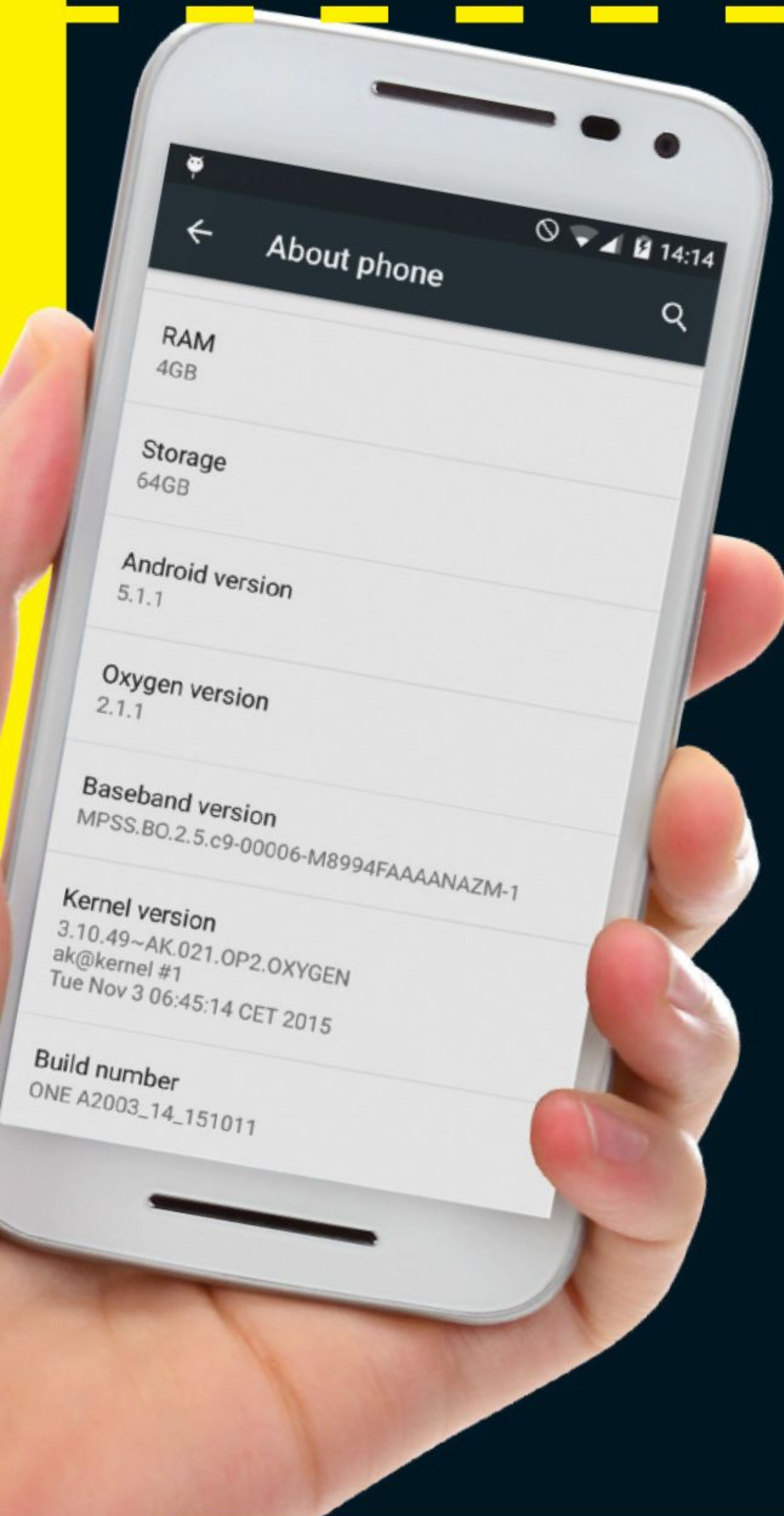
Using a ZUK Z1 running the ZUK UI? Convert your device to use Cyanogen OS to get the most out of it

### 62 Remap buttons with All in one Gestures

Remap your hardware buttons, corner gestures and more







# Enhance your device with custom kernels

Community developed kernels can enhance the performance of your device

In your device's ROM build, the kernel is the **most fundamental part**. Contained within the boot image, the kernel provides access to take control of the low-level hardware in your device. In a standard ROM, the kernel is optimised to provide the best experience for all users in the areas of battery life, performance and overall tuning.

One of the benefits of Android being based on Linux (and the Android kernel being based on the Linux kernel) is that the code is licensed under the GPL, which obliges all manufacturers to make the kernel source available for download. This enables developers to use this as a starting point for creating their own variants with a host of additional tweaks and features, more suited to be used by enthusiasts and those of us who are looking for an additional degree of tuning compared to what is offered by default.

As kernels are contained within the boot image, they can't generally be flashed separately. Consequently, the build process includes extracting the boot image RAM disk, recompiling it with the new kernel and then either booting or flashing the new image via the bootloader, which needs to be unlocked for the required permissions.

## Five top tips about your custom kernel

### 1. Command-line flashing

Your downloaded kernel will likely be a boot image. After putting your device into bootloader mode, use the fastboot command **fastboot boot name.img** to boot one time or **fastboot flash boot name.img** to flash permanently.

### 2. Flashify GUI flashing

If you don't feel up to flashing from the command line (and you have root access), a number of utilities are available from the Play store that put a graphical interface onto the process. A great example is Flashify.

### 3. Kernel backups

There are lots of kernels out there to try and many of them are very frequently updated. It's always a good idea to have a backup in case of problems – use TWRP or ClockworkMod Recovery to back up and restore the boot image.

### 4. Automatic updates

As kernels work at a very low level, they don't typically have any sort of user interface. However, many do have companion apps available that as well as offering configuration options for the kernel often include automatic update checking and flashing.

### 5. Colour control

Some kernels offer Gamma Control, which enables you to tune the colour settings. If you feel your device is too warm (yellow) or too cool (blue), a kernel with this feature is ideal!

## Check your kernel

How to find your kernel version, verify clock speeds and check the stock governor settings

### Check your kernel version

You can check your kernel version (and ensure the custom kernel has applied) in the About screen in Settings. From the adb command line, you can also use the command **uname -a** to get full kernel version details.

```
1. adb
shell@OnePlus2:/ $ busybox uname -a
Linux localhost 3.10.49-AK.021.OP2.OXYGEN #1 SMP
2015 aarch64 GNU/Linux
shell@OnePlus2:/ $
```

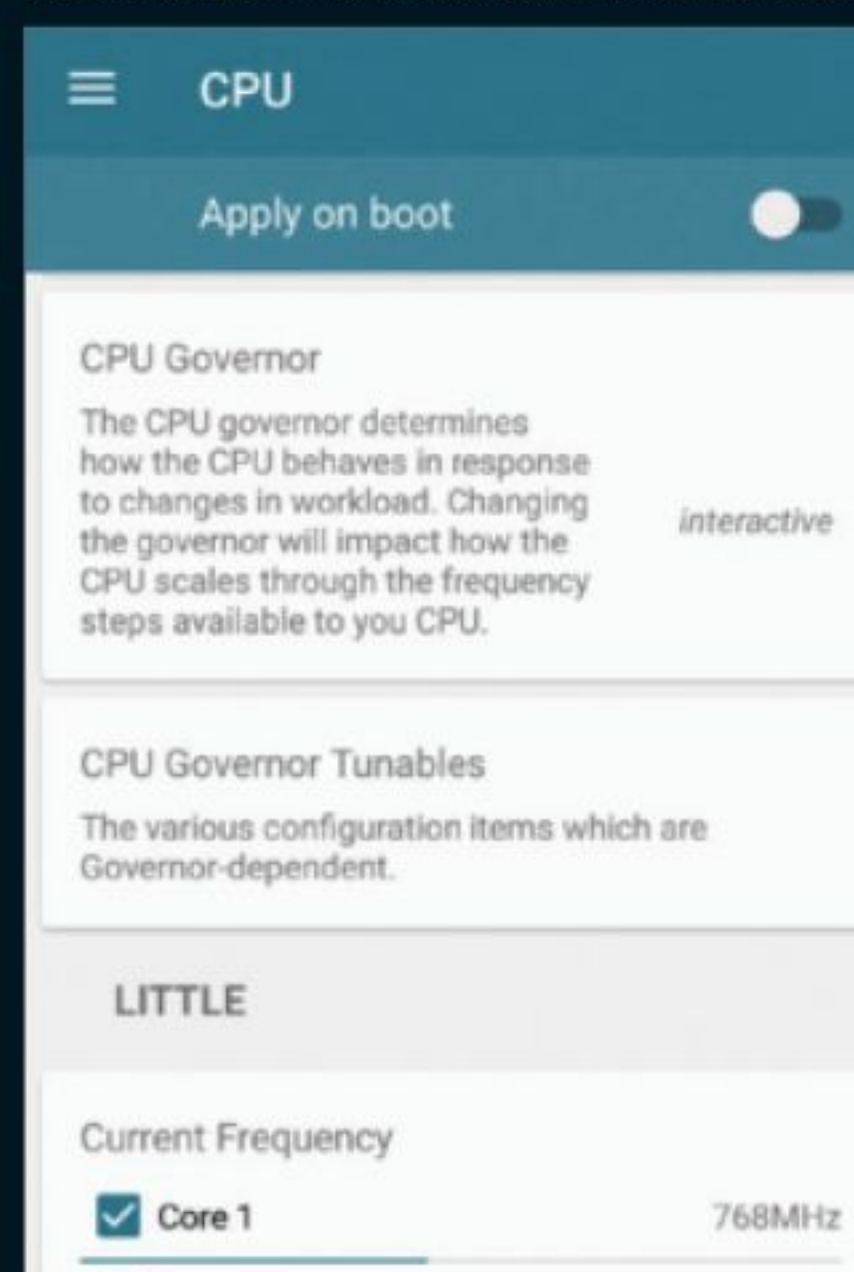
### Verify clock speeds

A popular use of custom kernels is to overclock or underclock your device. A simple app such as SetCPU (available to download free from the XDA-Developers forum) will let you verify what your processor speed is set to by default.



### Check the stock governor

The CPU governor is used to set the CPU frequency based on a host of different parameters, such as load and time in various states. Most kernels include a number of additional governors, configurable using apps.

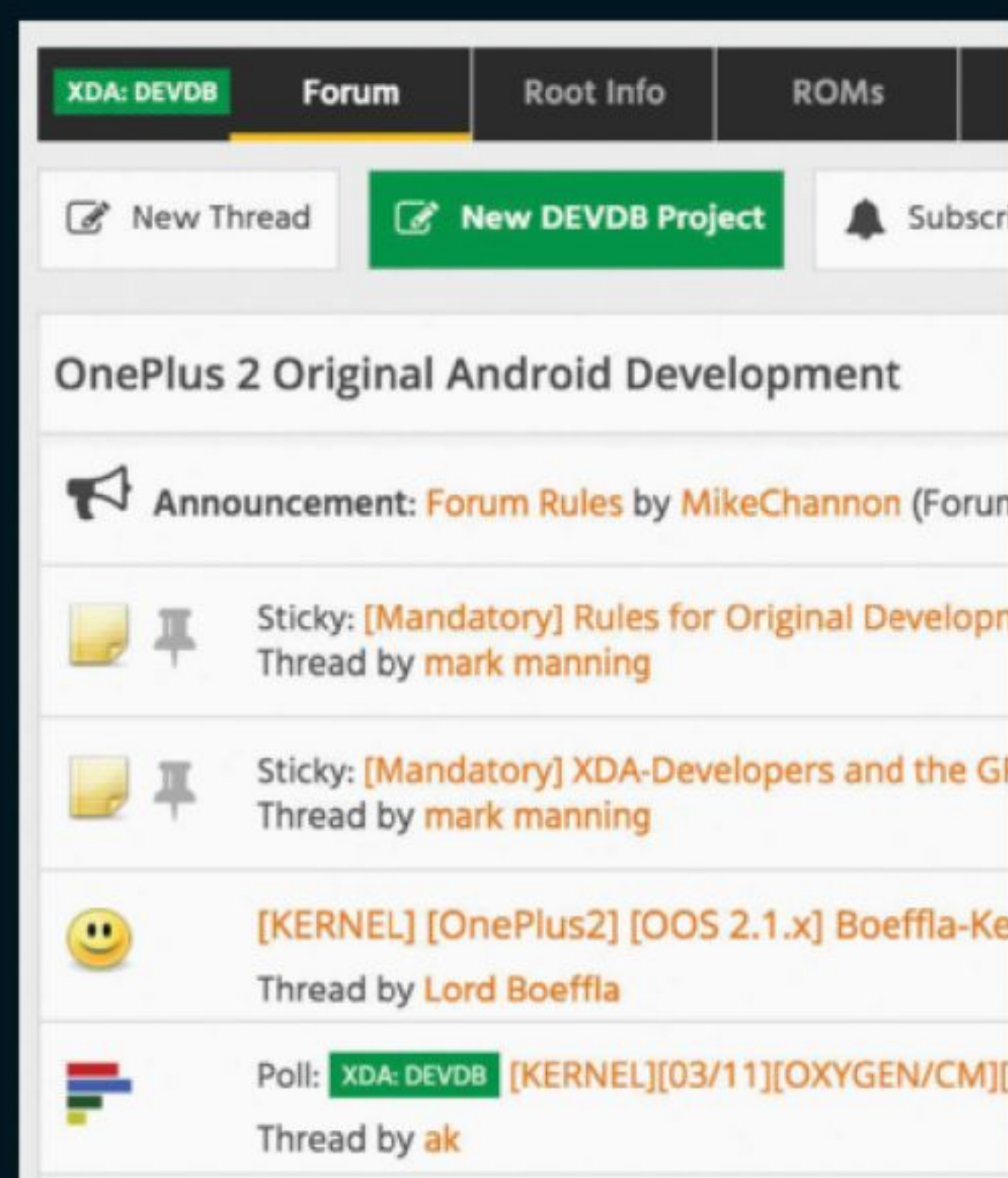




# Download a custom kernel

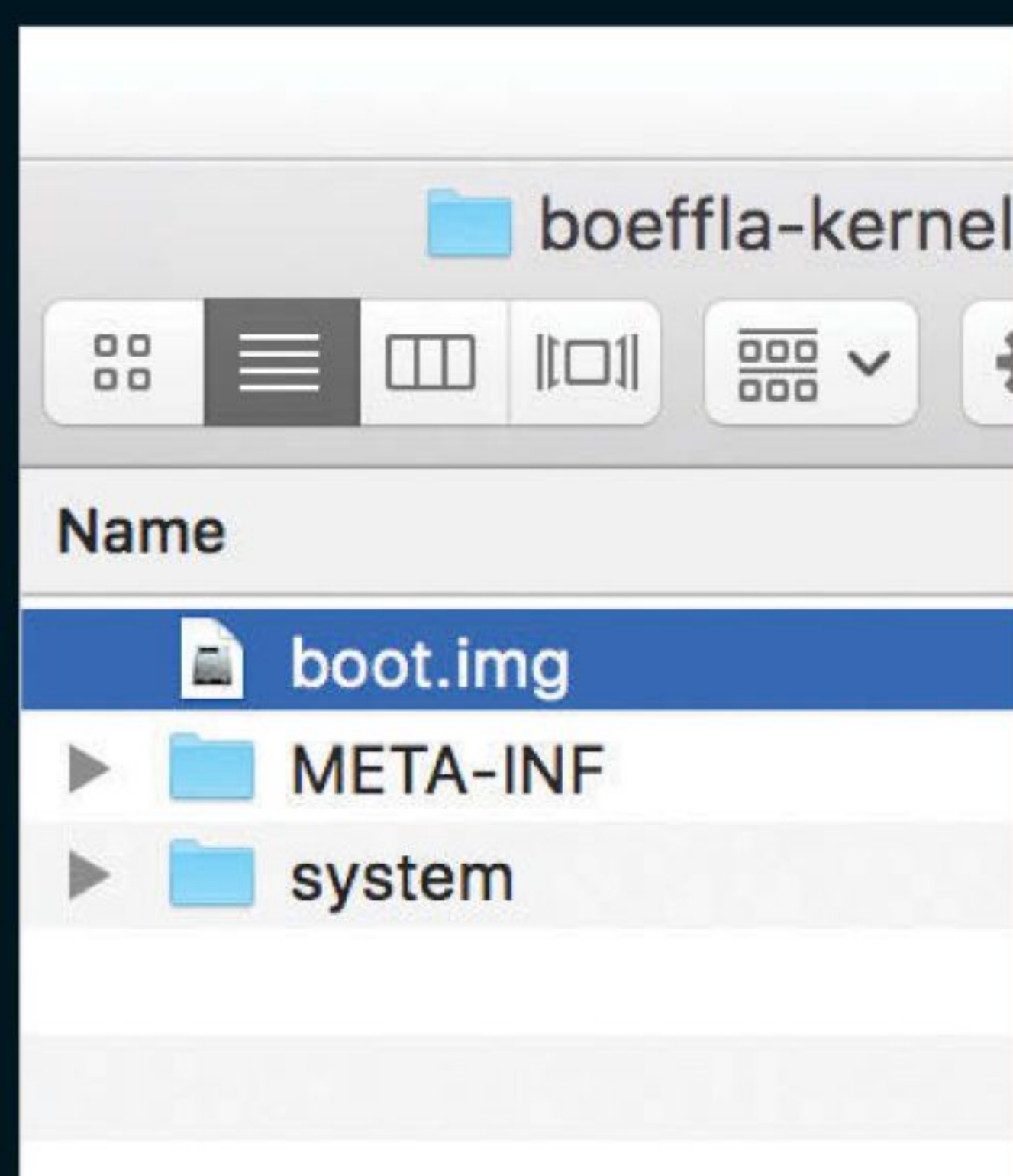
Start your custom kernel adventures by checking the options that are out there

Custom kernels are popular modifications on Android because there is a mandated release of the source code by the device manufacturers under the terms of the GPL. As such there are lots of options to choose from, with subtle differences between the different offerings.



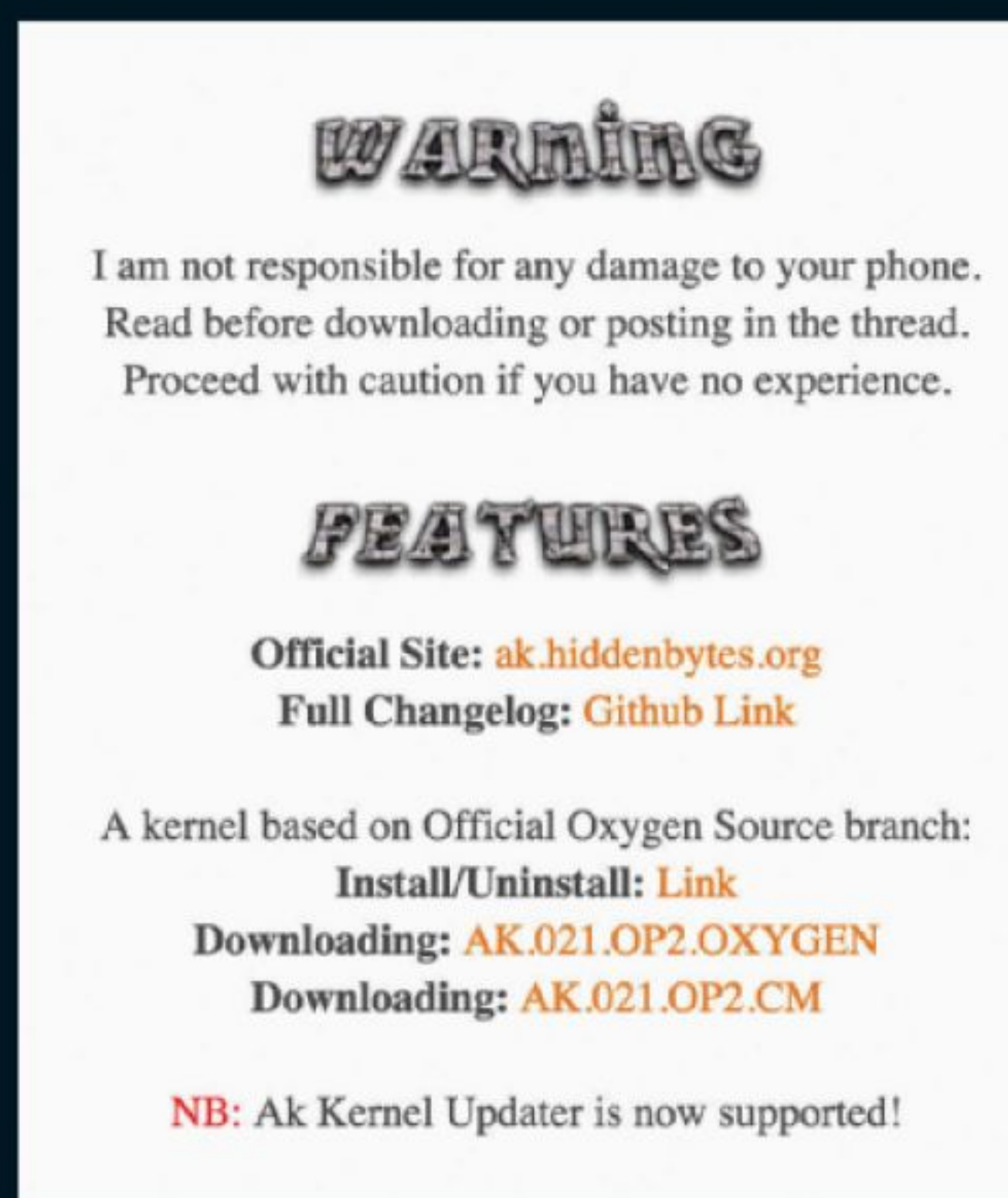
## 1 Where to find kernels

The best place to look for custom kernels is the most popular online forum for your specific device. There's a good chance that this will be XDA-Developers for the big-branded devices or perhaps another forum, such as MoDaCo, for less mainstream products.



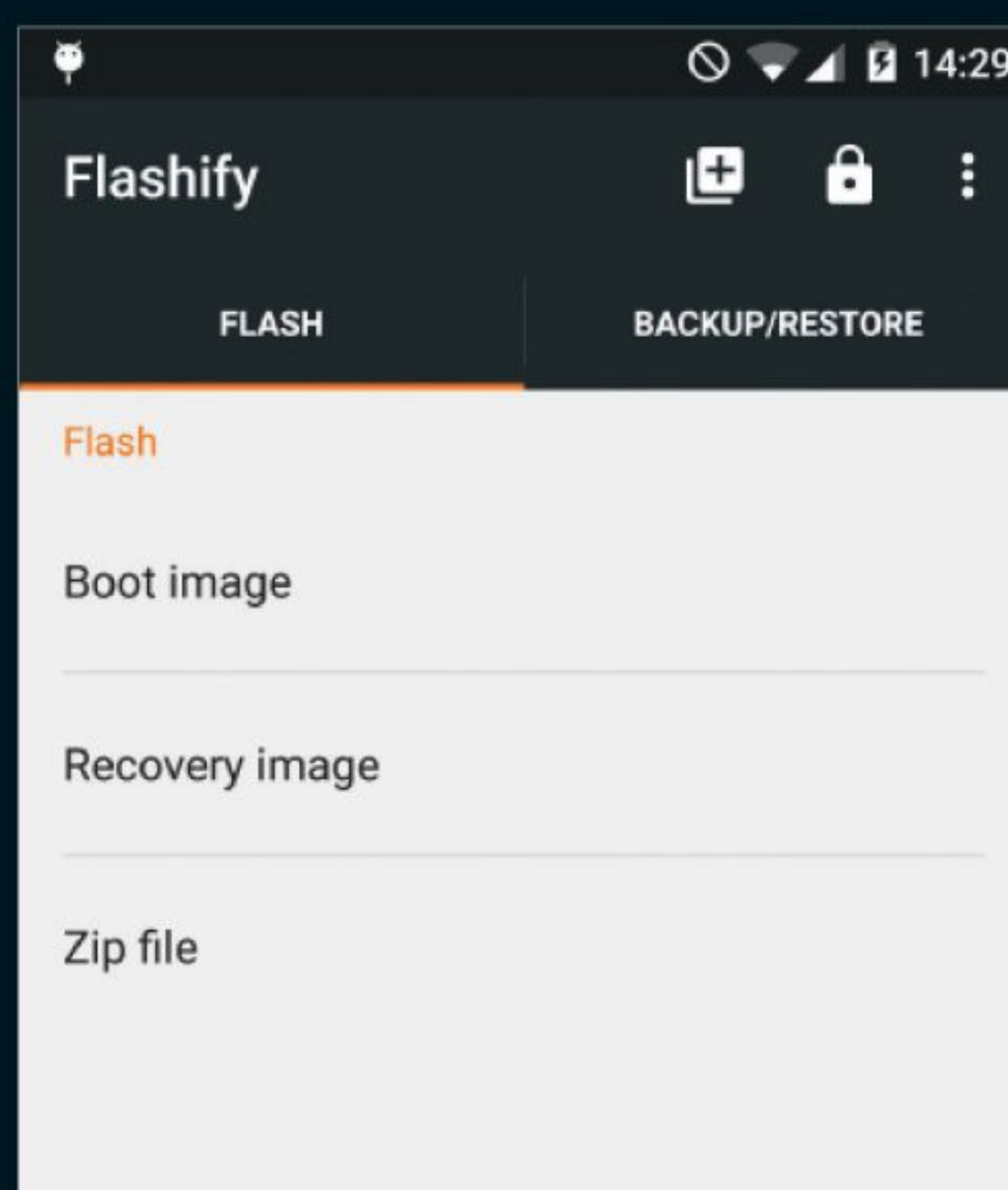
## 3 Kernel download format

A custom kernel can be in a variety of different formats – it may be in a ready to flash .IMG or a ZIP installer using a custom recovery. If it is a recovery installer, you can manually extract the image file to use.



## 2 Kernels and ROMs

It should be noted that different ROMs may require different kernels, even on the same device. For example, OxygenOS and CyanogenMod 12.1 on the OnePlus 2 need slightly different kernels, mainly due to the fact that the boot image RAM disks are different for each one.



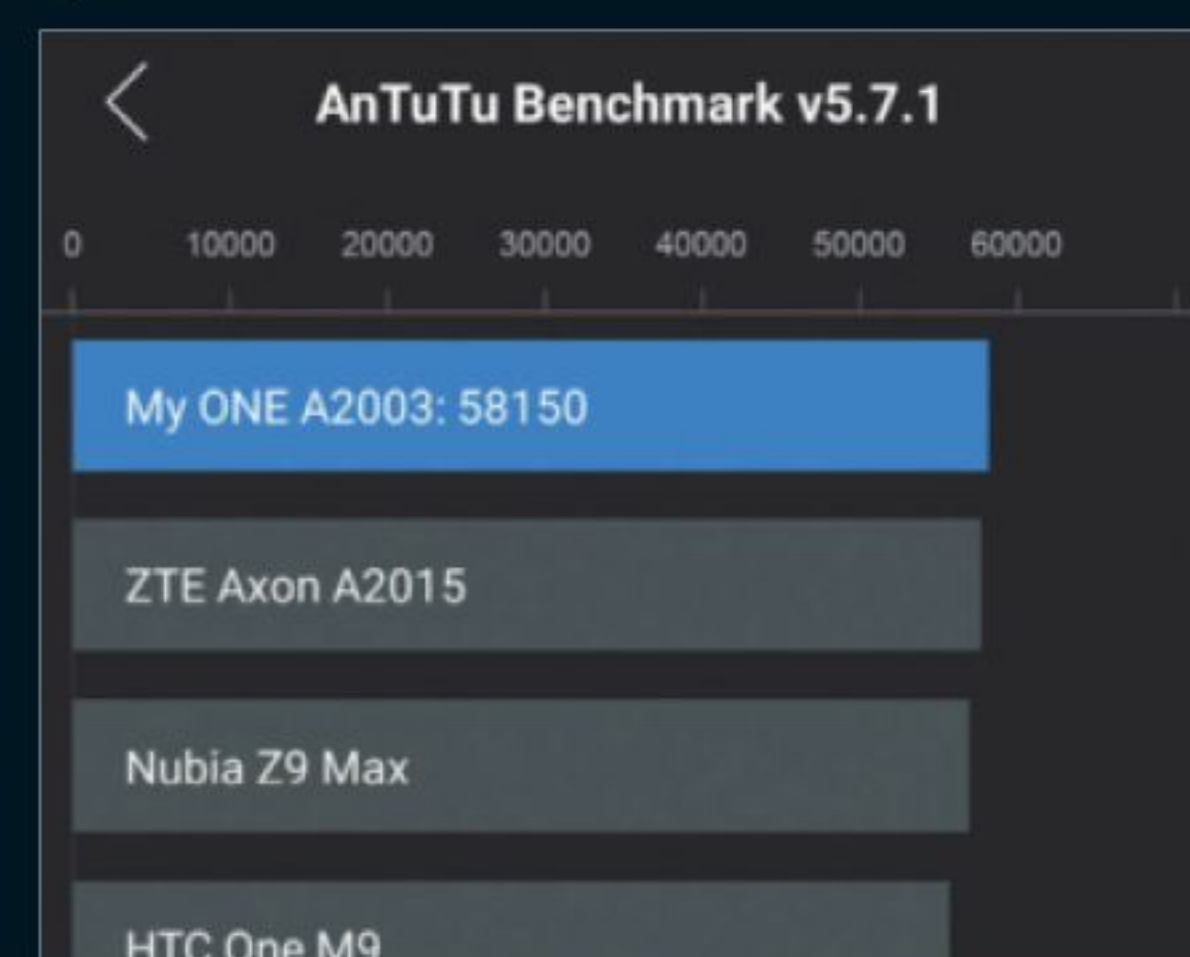
## 4 Flash the image

As well as using fastboot or a flashing tool, you can also manually flash the image using dd from the adb shell command line. However, this is strictly for experts only as it is more powerful (and therefore more dangerous) than the other options.

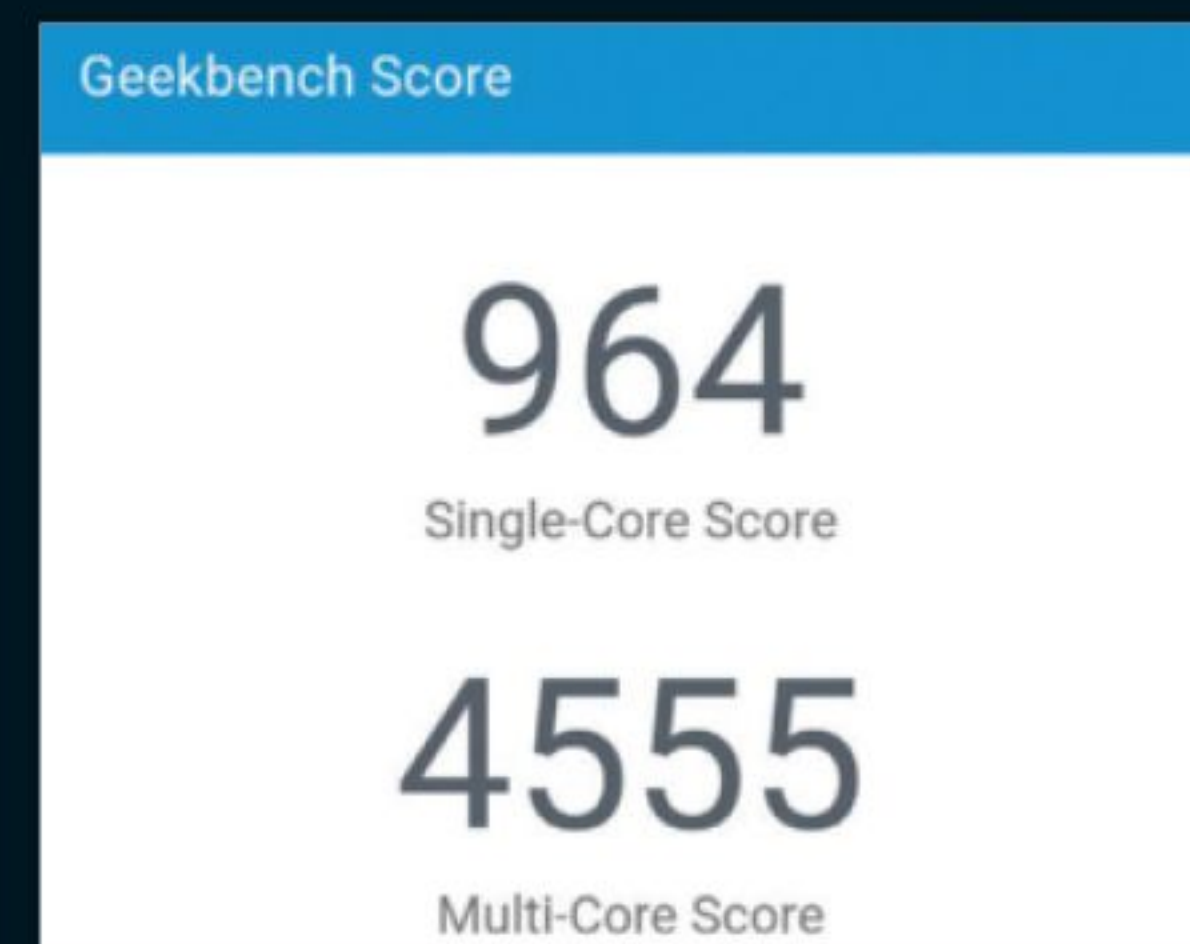


Is using a custom kernel really improving the performance of your device?

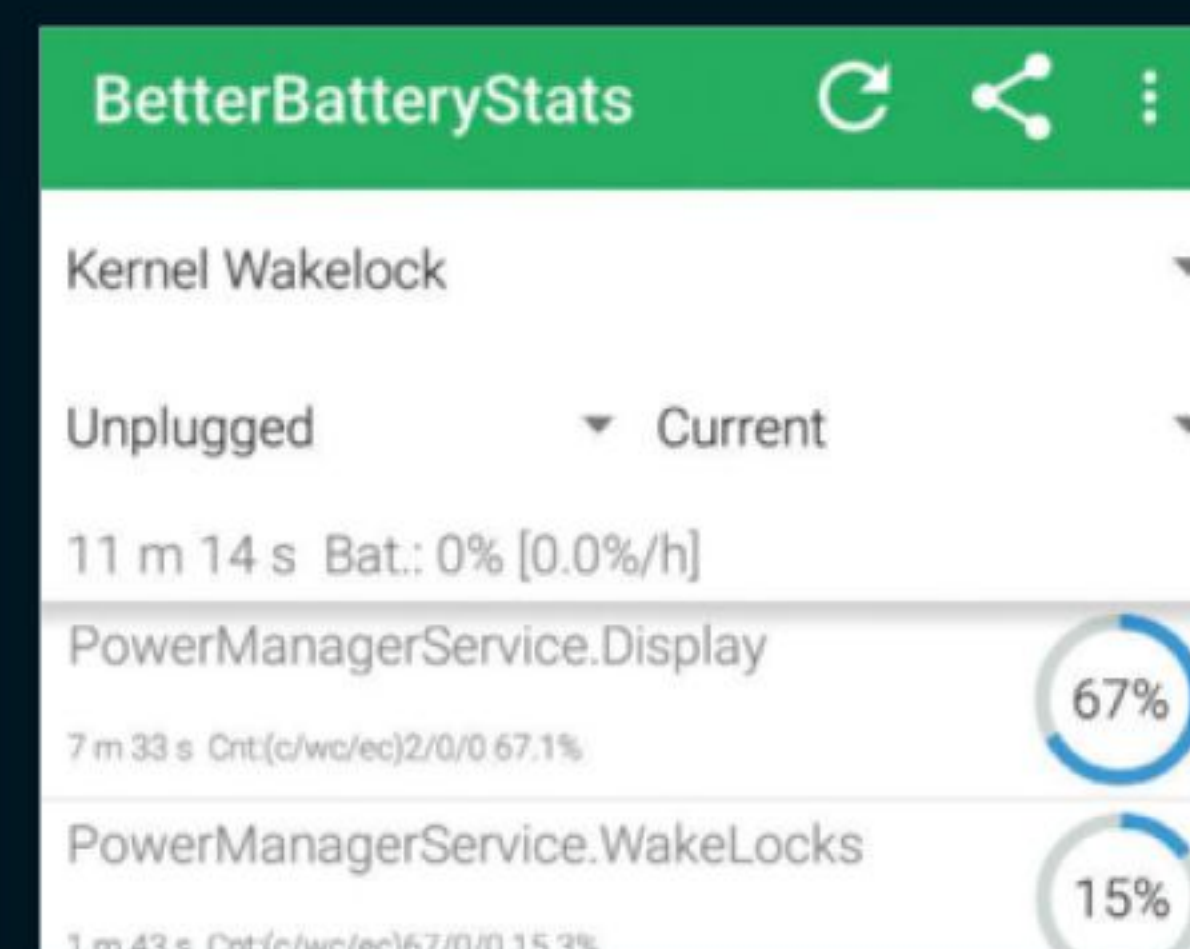
# Benchmark your device



1 In order to measure the overall speed of your device, a complete benchmarking tool such as Antutu Benchmark is ideal. Note your statistics before and after flashing.



2 When benchmarking with different kernels using Antutu or Geekbench, try and maintain the same conditions – power state, running apps and so on.



3 One of the main reasons users install a custom kernel is to improve battery life! Use a tool such as BetterBatteryStats to keep track of where your power is going.



## Modify the CPU speed

A custom kernel enables you to overclock or underclock the processor inside your phone

Now that you've installed a custom kernel and checked the default clock speeds of your device using a tool such as SetCPU, you might want to consider over or underclocking your phone. Custom kernels often adjust the maximum and minimum available speeds on your device, as well as potentially changing the number of steps available between the speeds.

Overclocking your phone will give the potential for higher performance; this is

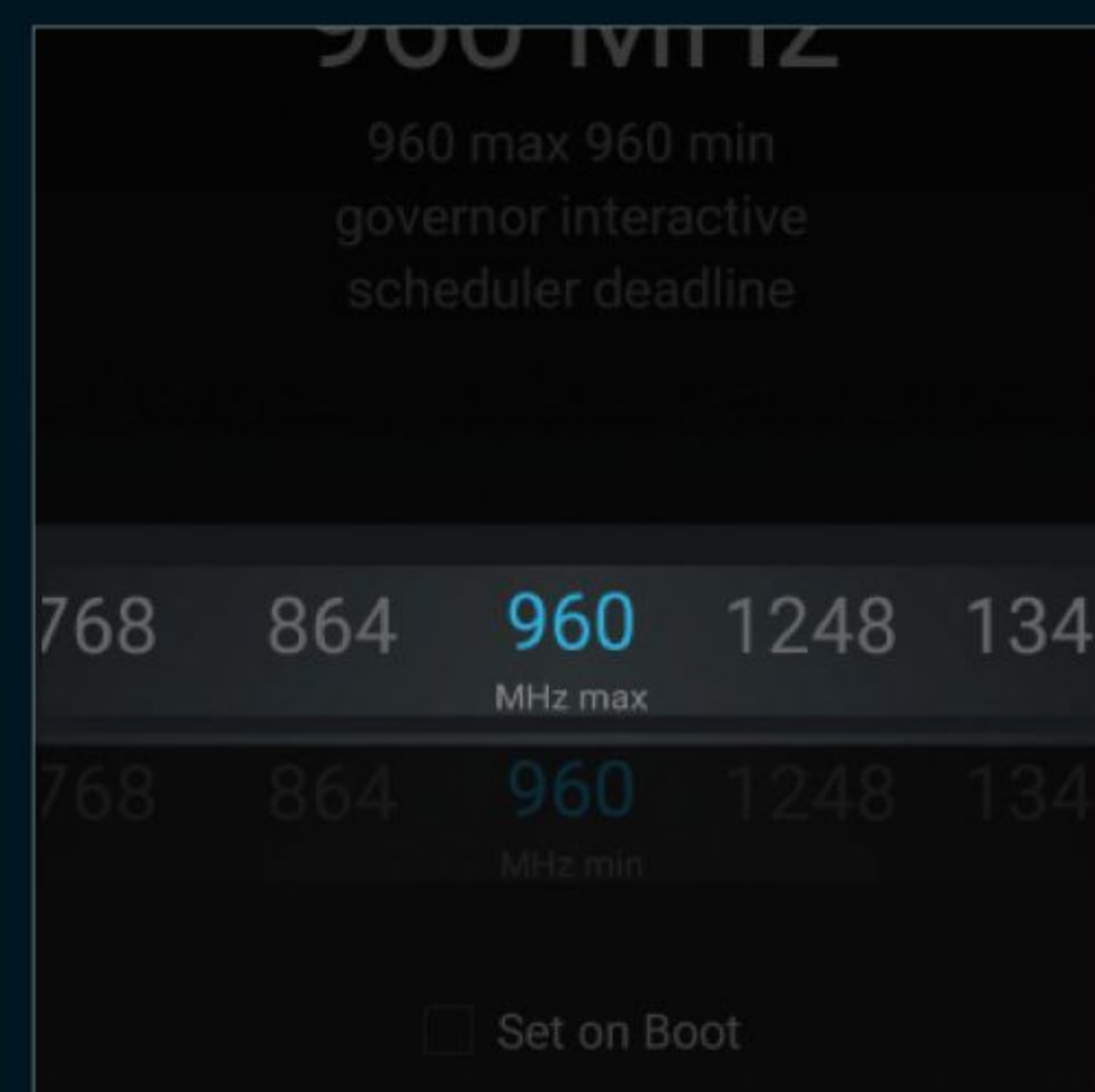
useful for all you heavy gamers or on devices where the processor might not be that powerful to begin with. The downside to overclocking your phone is additional heat, faster battery drain and potential instability if not configured carefully.

Underclocking is the opposite as it forces your phone to use lower CPU speeds to provide battery and thermal benefits at the expense of a little performance. Such an issue may be less of a problem on more powerful devices. Again, the device can become unstable or very unresponsive if the clock speed is locked too low.

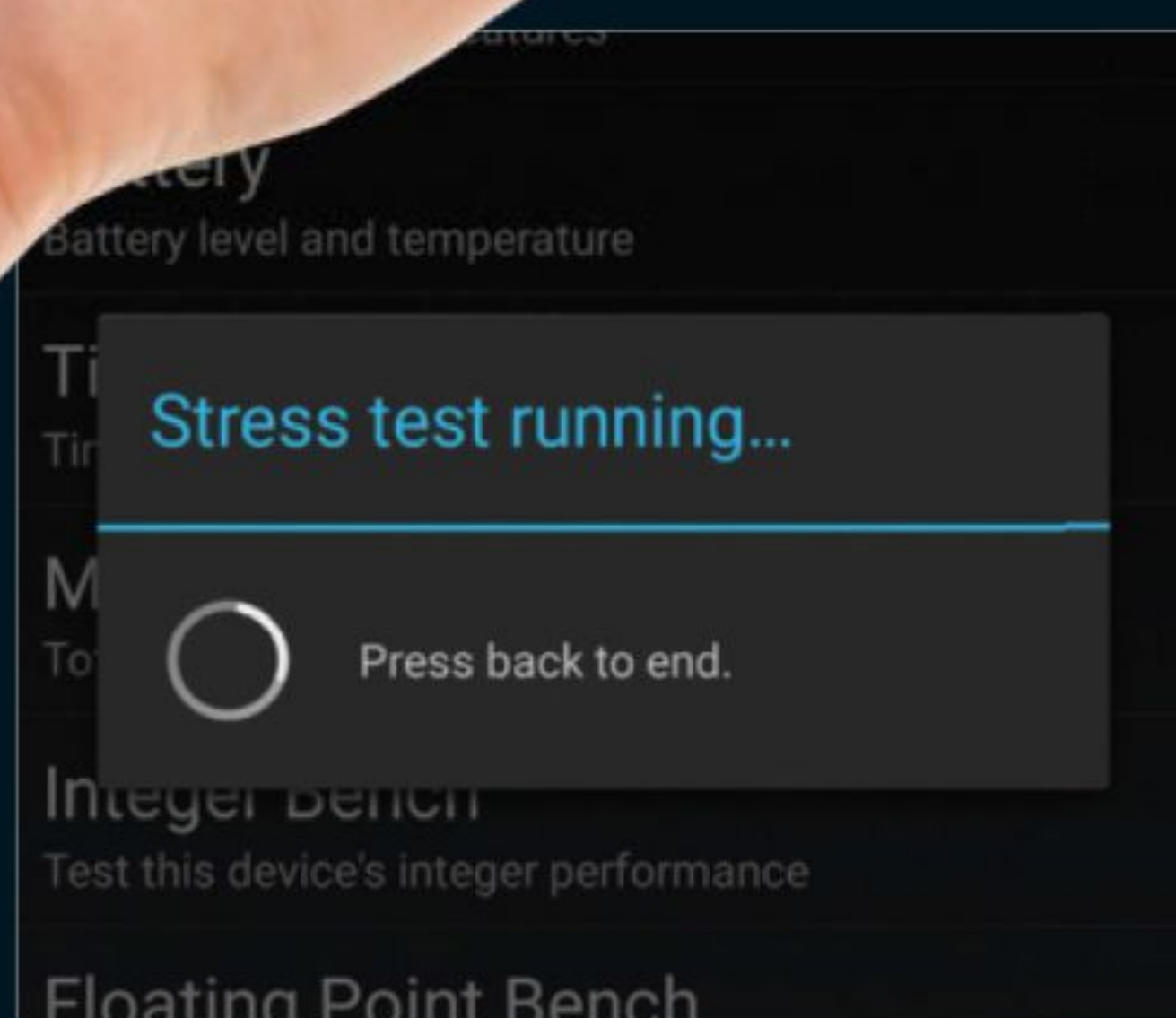
Optimal configuration can be very much a process of trial and error (and is very dependent on personal preference).



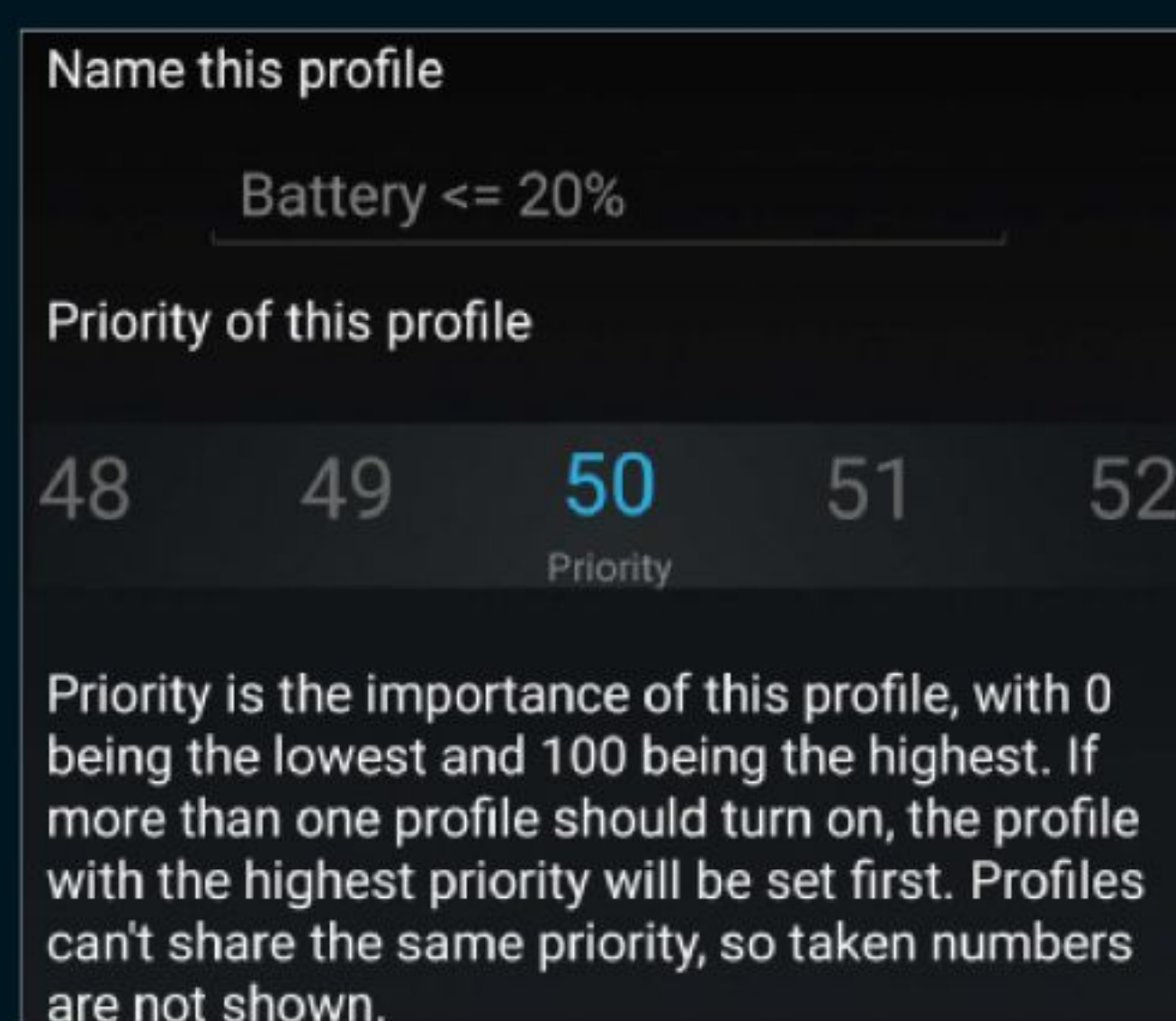
**1 Set a minimum speed**  
The minimum clock speed is the speed that the device will drop to when it is under a minimum amount of load, for example when the screen is off. Use lower values for better battery life and higher values for increased responsiveness.



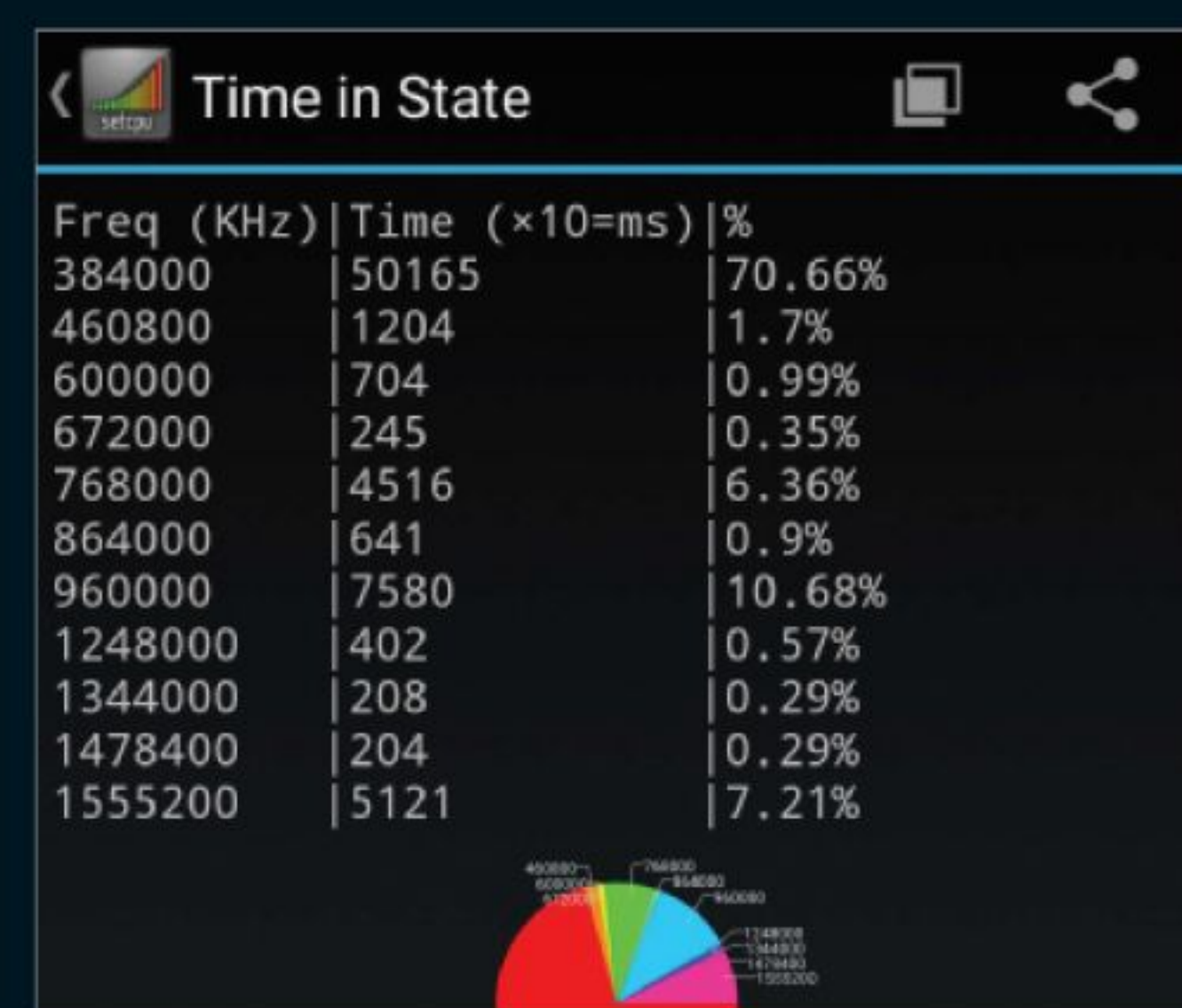
**2 Set a maximum speed**  
Maximum clock speed determines the highest speed the processor will reach when under a heavy load, such as gaming. On powerful devices, this can often be lowered to save power without a significant decrease in the experience.



**3 Trial and error**  
There are no hard rules on which values work best as it will depend on what you use your phone for. Start with the default values and tweak them a step at a time until you notice any issues. Stress testing can help you evaluate the settings.



**4 Use profiles**  
Profiles are a great way to take advantage of customisable processor clock speeds. By assigning different values to different situations such as low power, charging or running specific apps, you can really optimise your device.



**5 View statistics**  
Processor management apps, such as Setup and CPU Tuner, enable you to view the amount of time your device has spent in specific CPU states. This lets you see how effective your changes are and plot your average CPU usage.



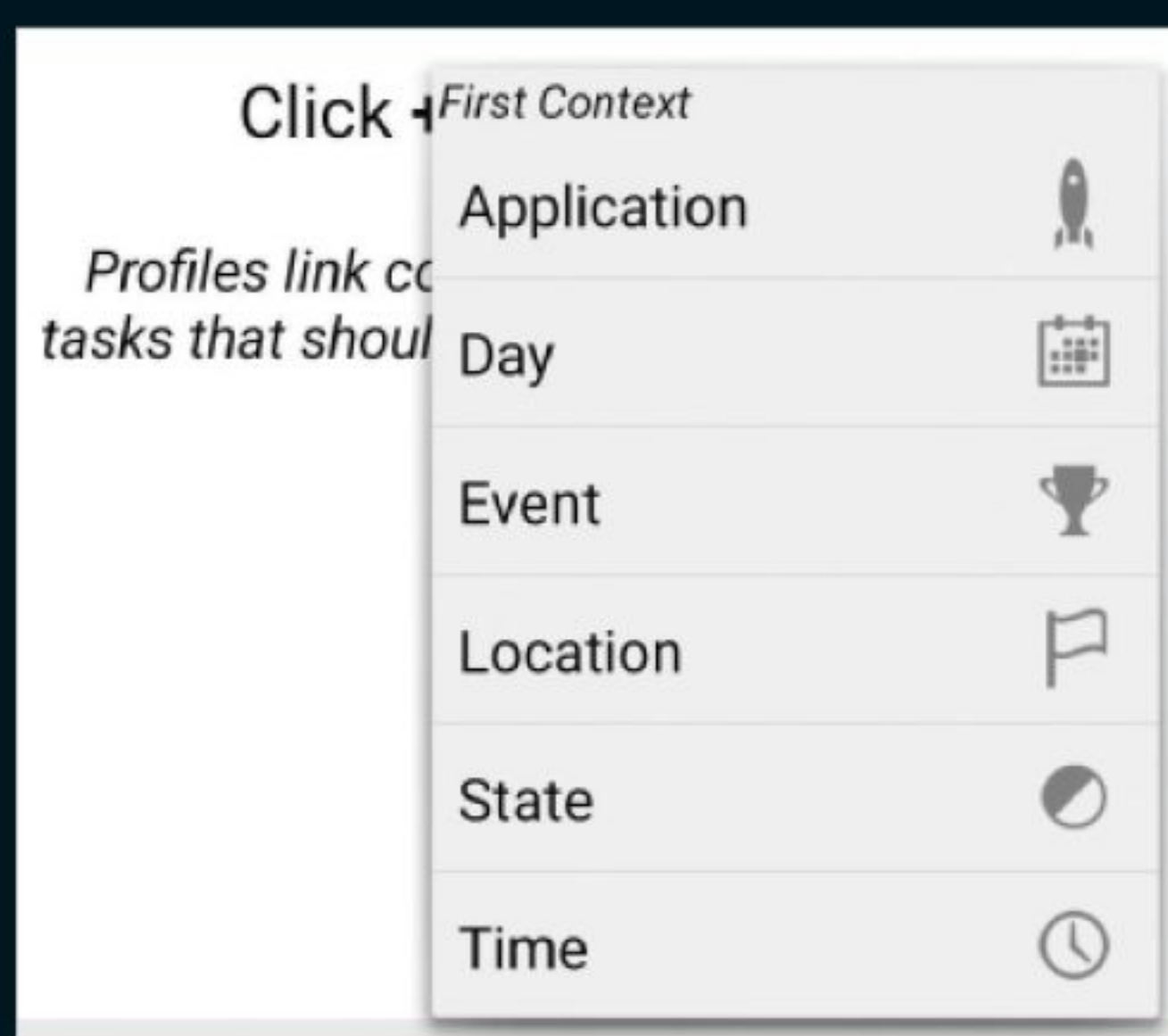
# Automate with Tasker

The popular trigger/action app Tasker can also change your kernel settings

A number of CPU tuning apps let you set up profiles based on common conditions, to tweak your processor settings dependent on device status. Integrating with an application such as Tasker takes this to the next level, as it includes a huge number of custom triggers and is also very extensible with third-party plugins.

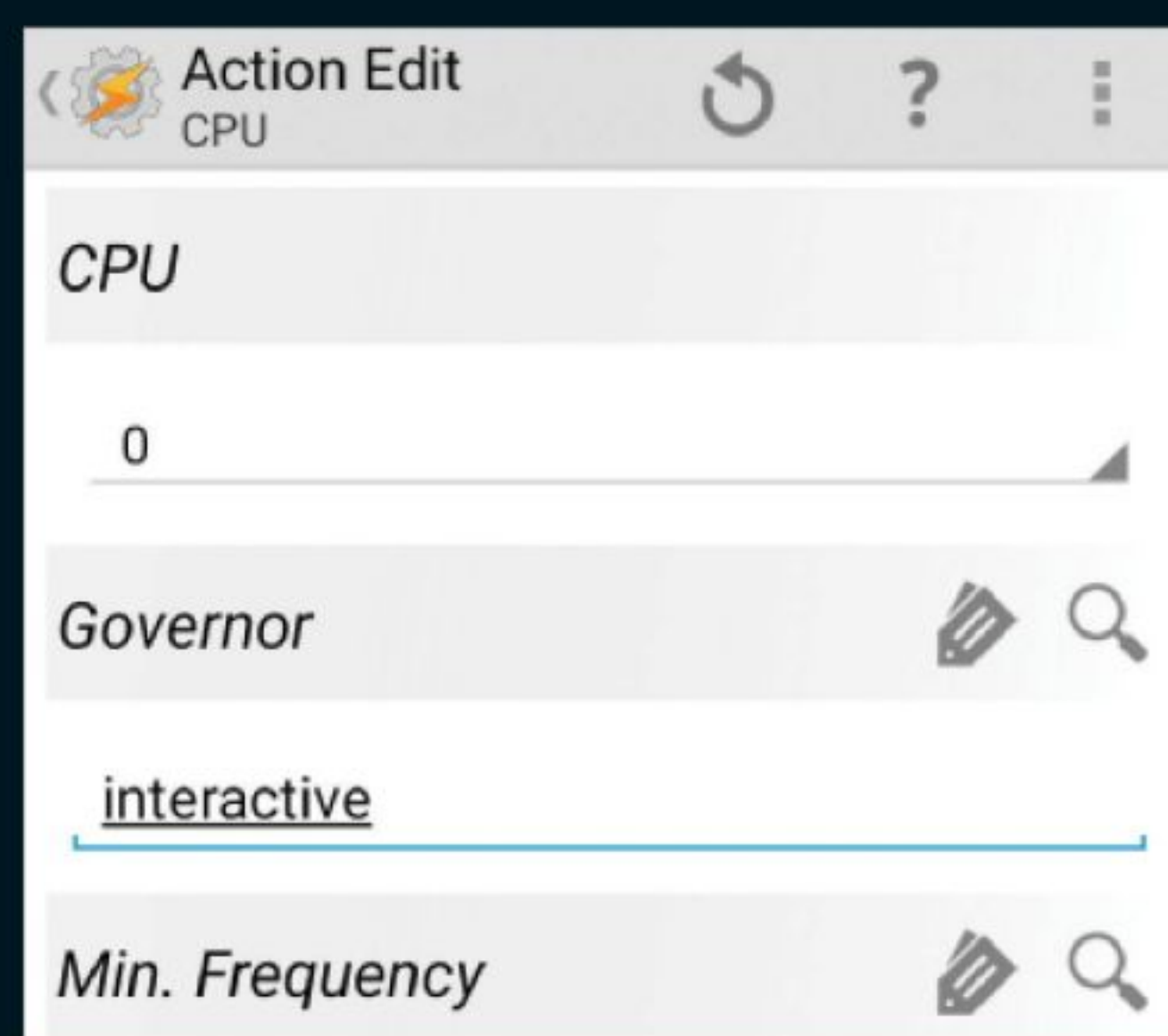
Aside from simple use cases, Tasker can be used to create much more complex

scenarios than would be possible otherwise: for example, you could use Tasker to switch to a conservative governor when using a specific low-power app (such as Amazon Kindle or similar) or you could even monitor CPU states and switch governor or clock speed based on the utilisation of the processor. With Tasker, you are limited only by your imagination. You can find Tasker at [tasker.dinglich.net](http://tasker.dinglich.net).



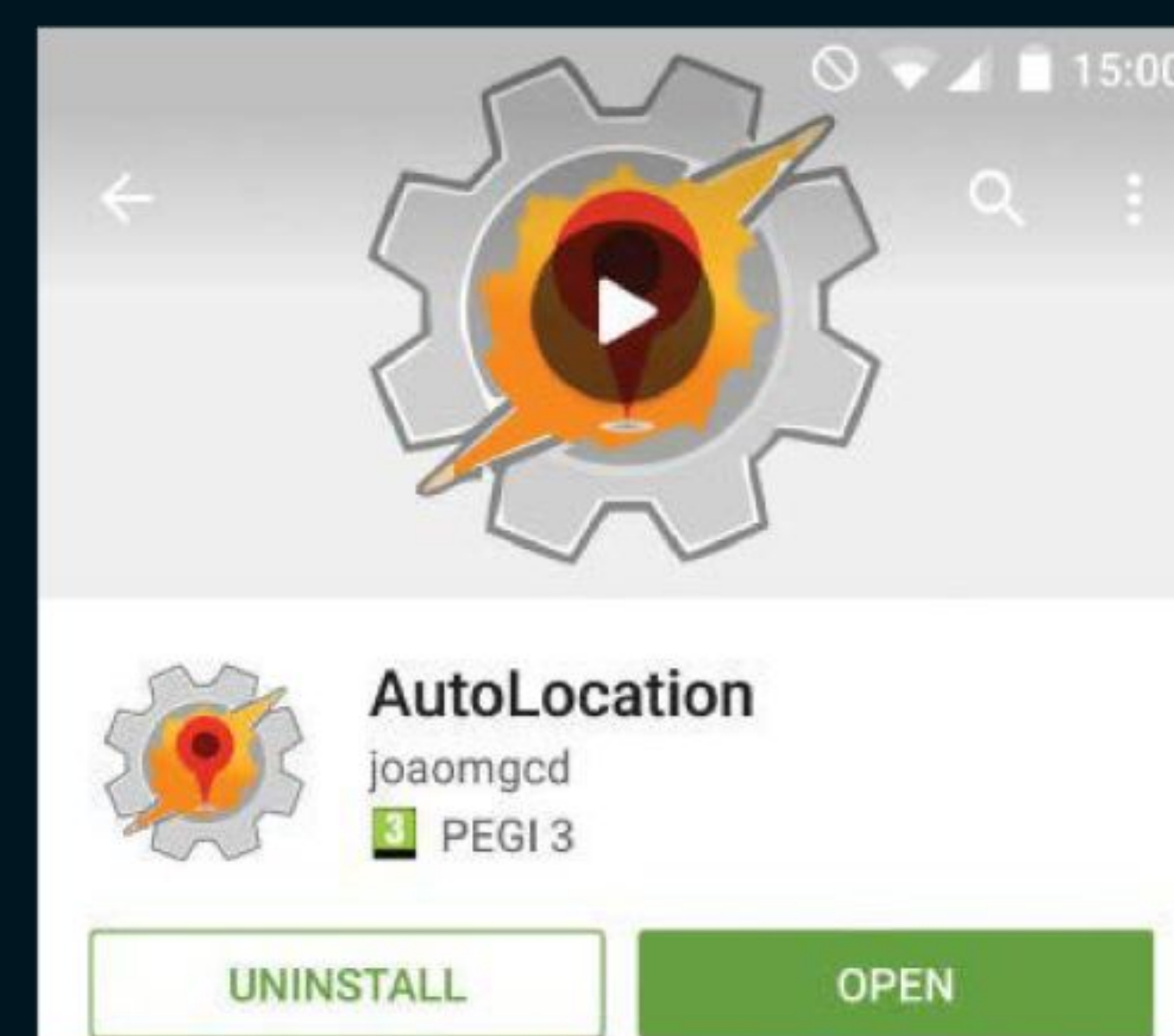
## 1 Set a trigger

In Tasker the + button is used to create a new profile (the collective name for a trigger and action). The button displays a list of possible triggers, but the state group is most useful when setting up kernel options.



## 2 Set an action

After choosing a trigger, a button appears prompting the user to create a new task. This is where the actions will live. CPU controls live in the System/CPU group and offer the ability to set the frequency range and CPU governor.



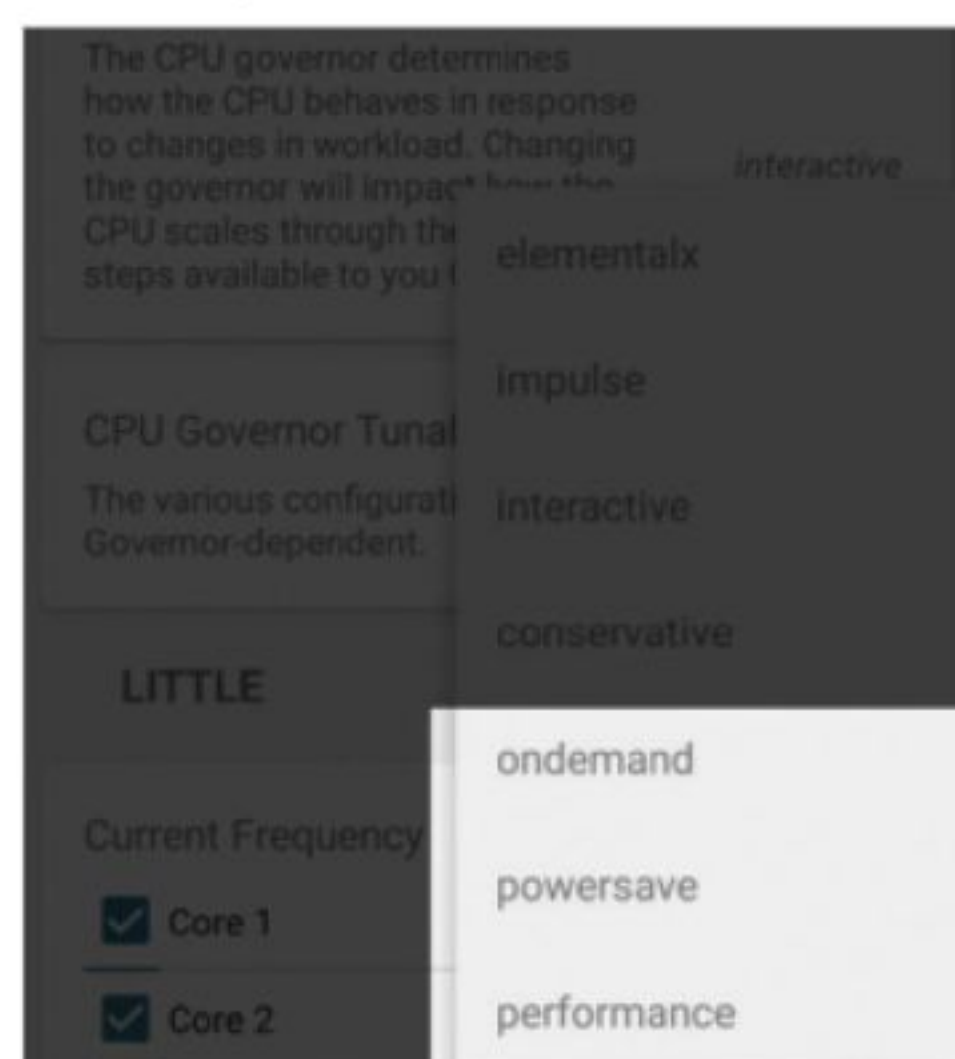
## 3 Third-party plugins

If you want to expand beyond the built-in features, a host of third-party plugins are available from the website or the Play store (plugins for the Locale app are compatible). Tasker was recently removed from the Play Store but is back now.



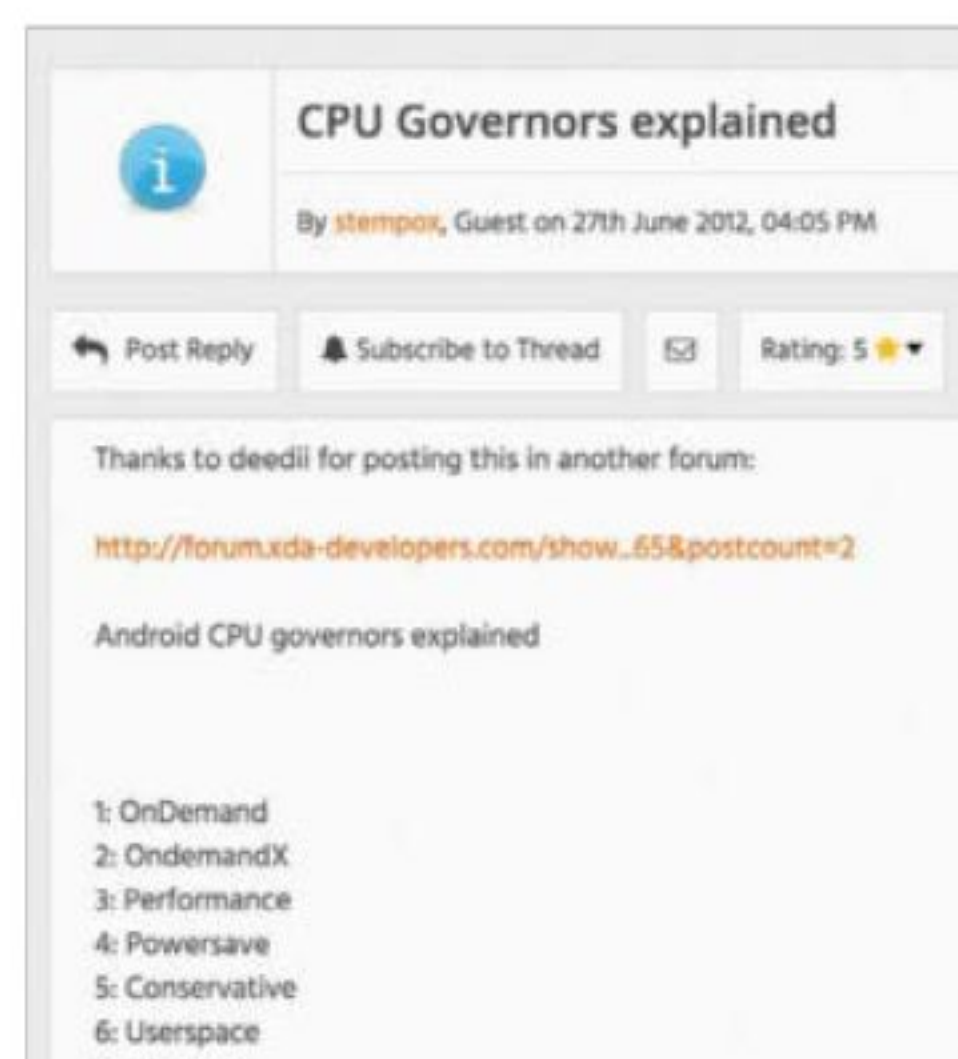
# Introduce CPU governors

CPU governors collect information and then use this knowledge to determine the best CPU speed. Custom kernels add lots of new options



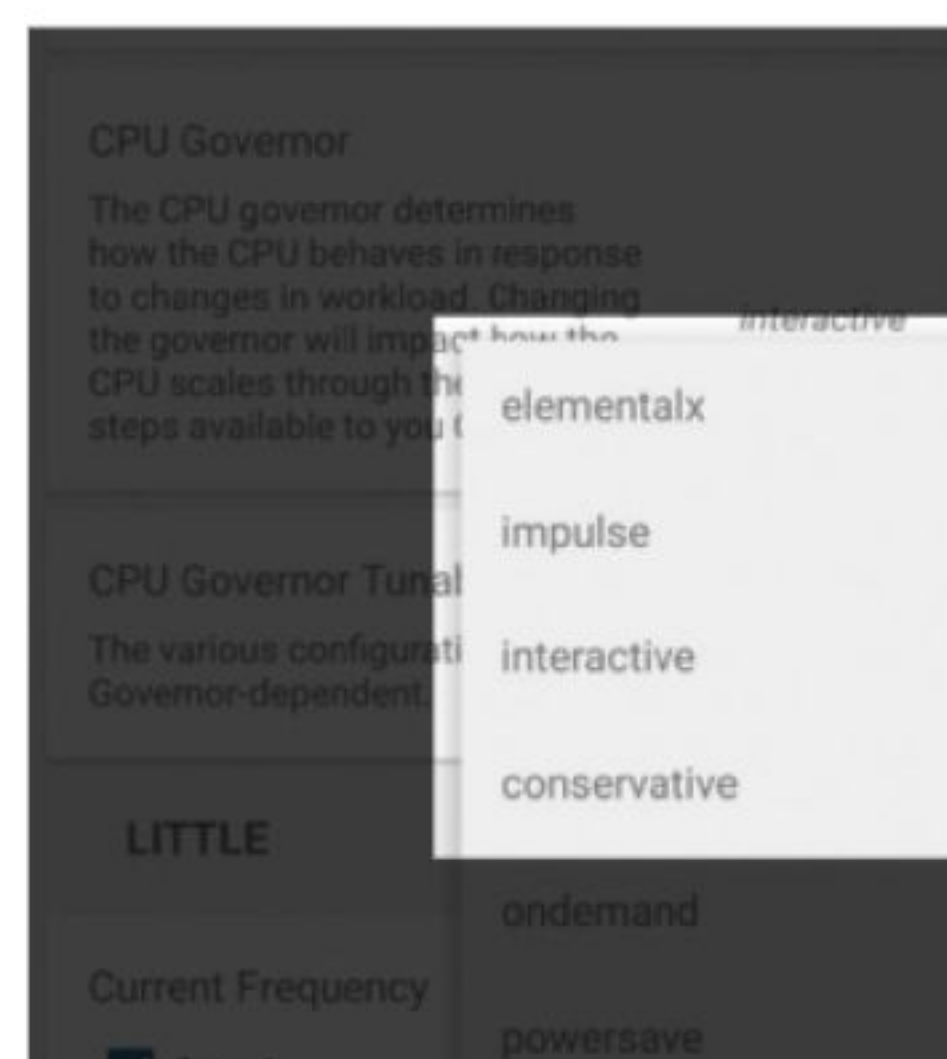
## 1 Governors

OnDemand, Performance and Powersave are the three most popular governors. OnDemand scales the processor speed to suit activity, Performance uses high speeds and Powersave keeps speeds low to optimise battery life.



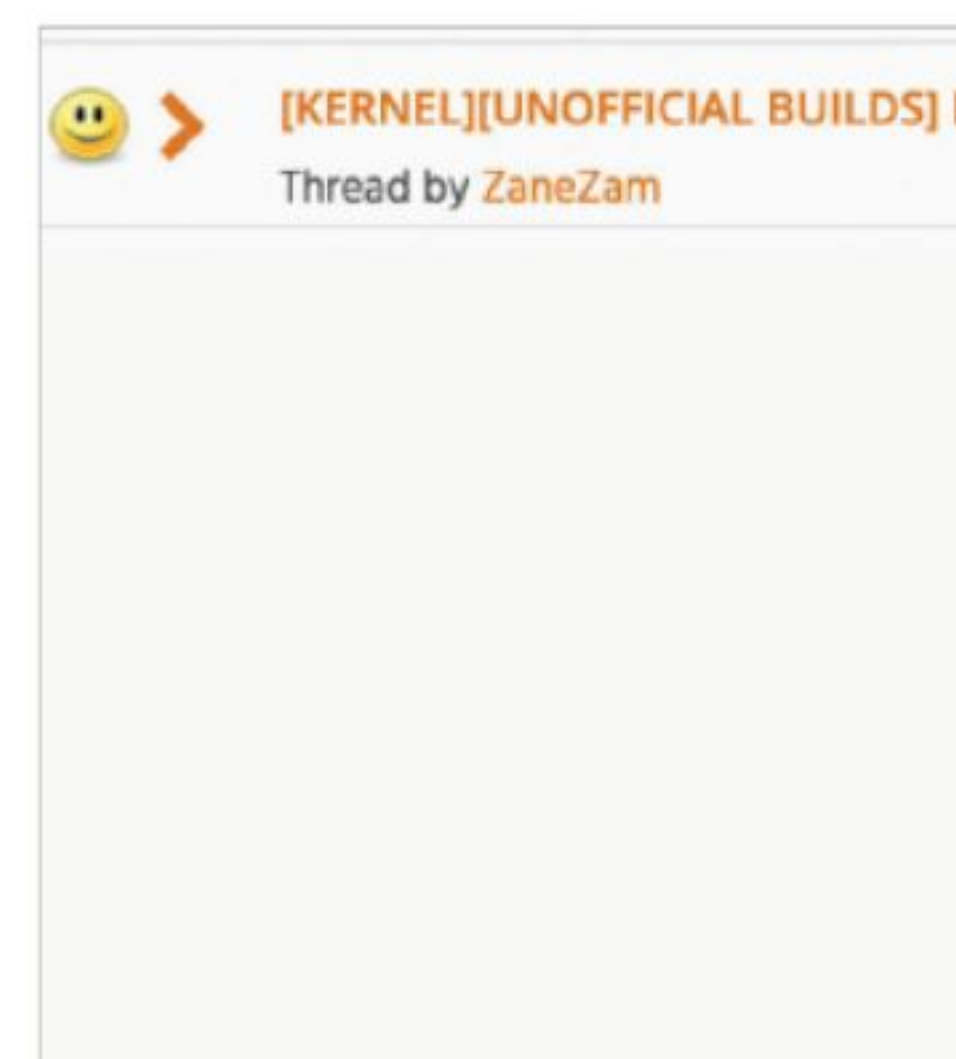
## 2 The alternatives

Aside from the governors listed here, you will likely find when you install a kernel that you are met with a huge list of alternatives. Governor guides such as [goo.gl/HK0dQX](http://goo.gl/HK0dQX) from the XDA Forum are a good starting point for information.



## 3 What to pick?

With so many available, it's hard to pick the ones with promise. It's worth checking out Impulse, which has battery improvements, Hotplug (which can disable individual CPU cores) and BadAss that prevents bursts of a high CPU speed.



## 4 The build process

When browsing the kernels, you may spot references to Linaro, Saberm0d and Uber. These are the processes used to compile the kernels from a source called toolchains. An optimised toolchain leads to a more optimised kernel.



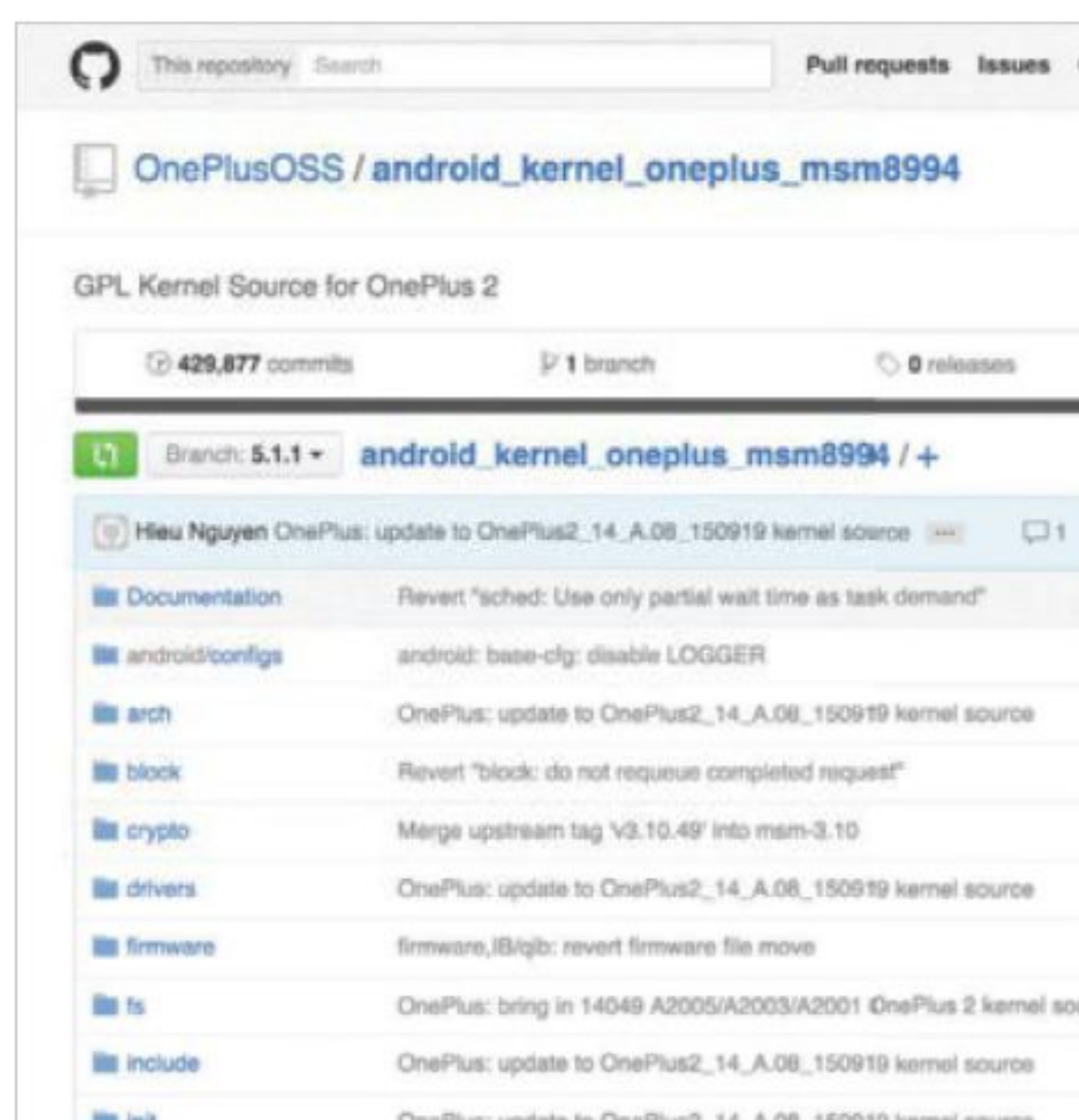
# Compile your own kernel

If you want to look deep into the inner workings of your device's kernel, you can build it yourself

For most devices there are at least a couple of options for custom kernels, but even so, if you want to really understand what is going on at the lowest levels of your device (and perhaps make some changes) then you can build the kernel yourself.

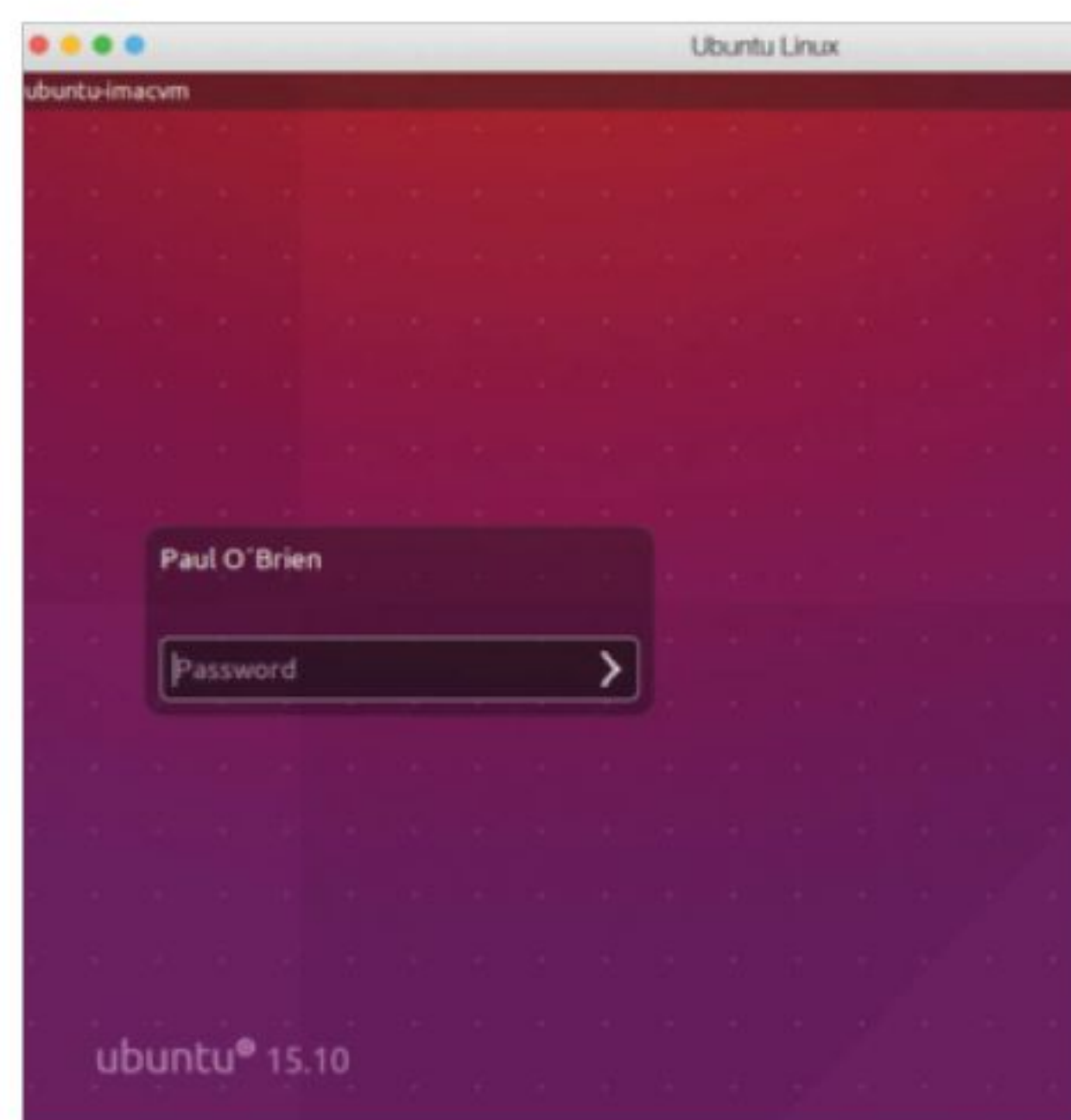
Making changes and enhancements is a process that is probably best left to the experts, but it is

interesting to see what is involved. If there is a particular feature (for example a governor) that is not available for your device, then merging in the source manually and building your own may be your only option. The community is always keen to help beginners, and kernel flashes are reversible so don't feel too intimidated.



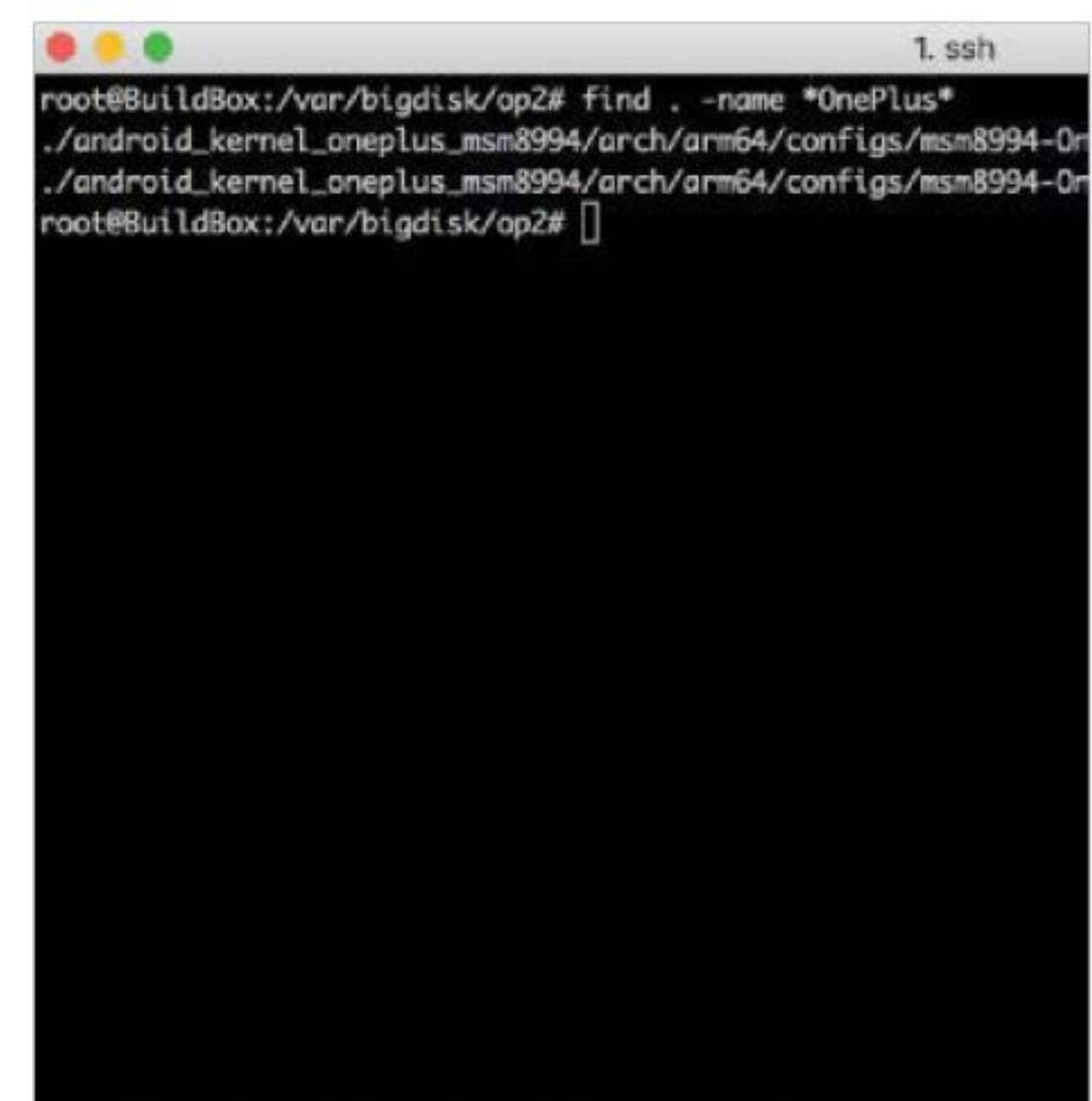
## 1 Download the kernel

Manufacturers are legally obliged to release a kernel source. There is no central location for a kernel source, instead you'll need to find the open-source page for your specific manufacturer. Ensure you download the right code and ROM version for your device.



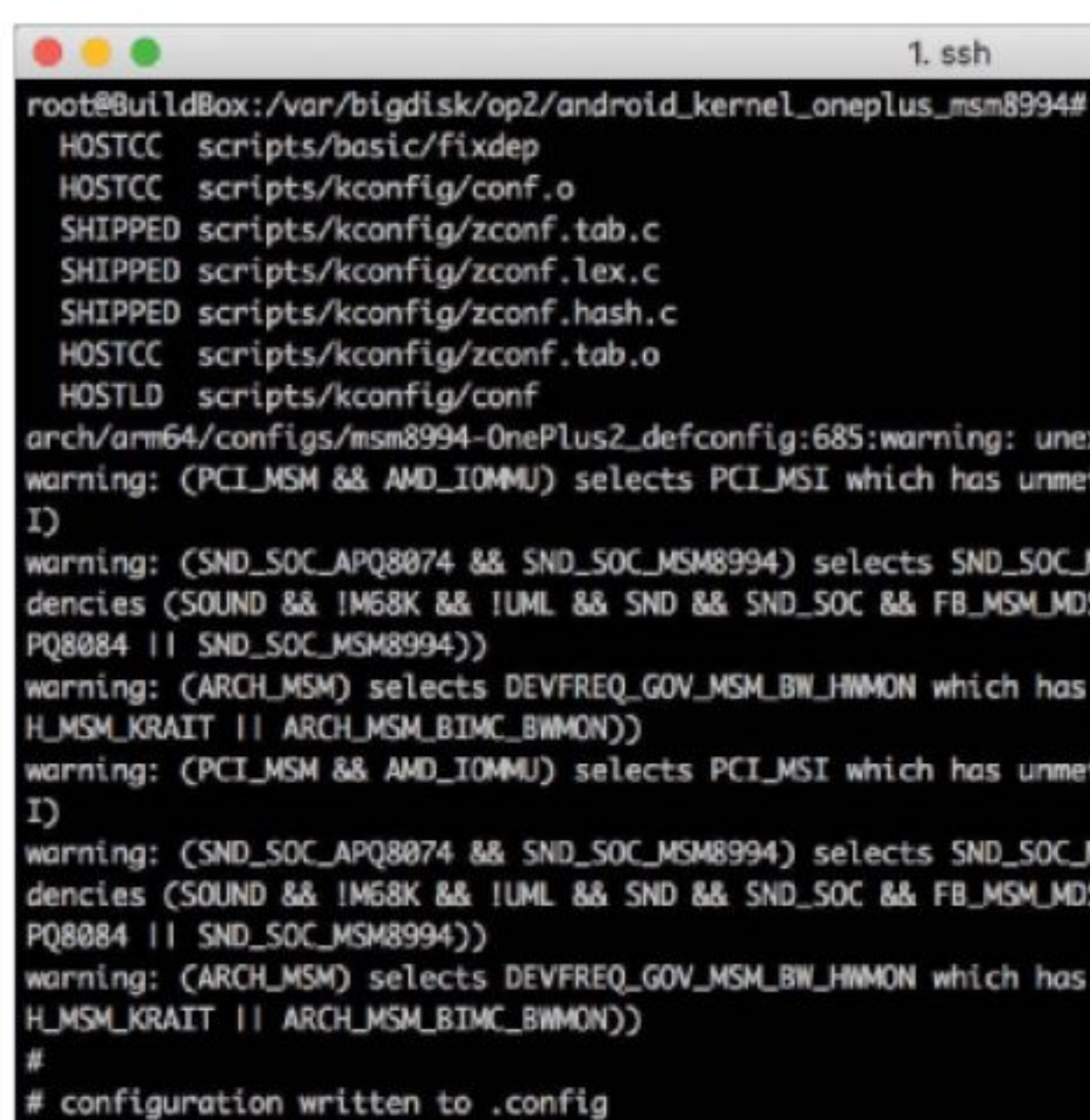
## 2 Your build environment

In order to build a kernel, you should ensure that you have a Linux machine to work on. One good alternative to a dedicated machine is using a LiveCD to set up a virtual machine in something like VirtualBox, both of which are completely free.



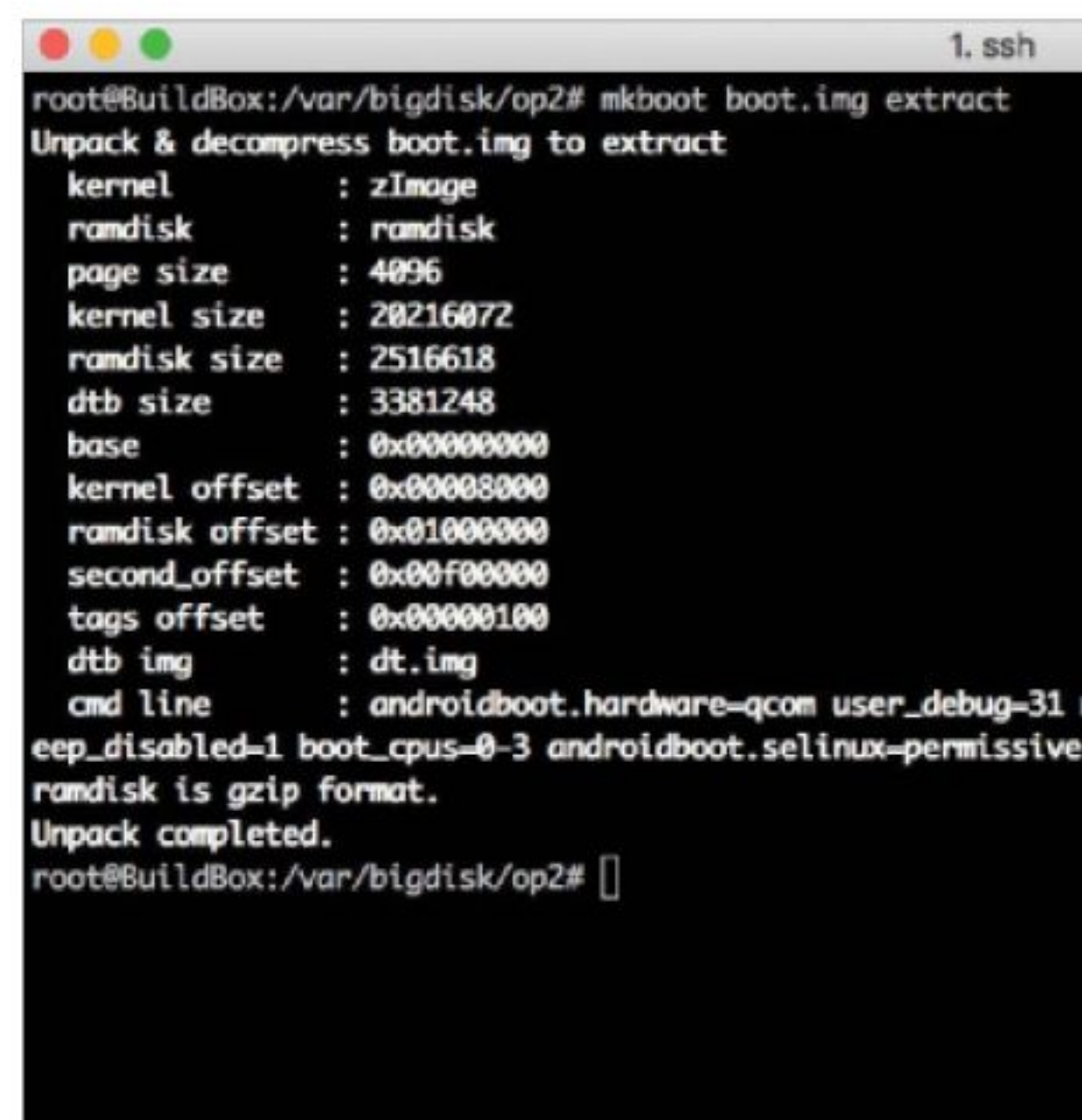
## 3 Kernel config

Kernel downloads can cater for lots of different devices or configurations, so before building the kernel, you will need to either pull the config from your device (if it exists in `/proc/config.gz`) or locate the correct default config (`defconfig`) in the downloaded source.



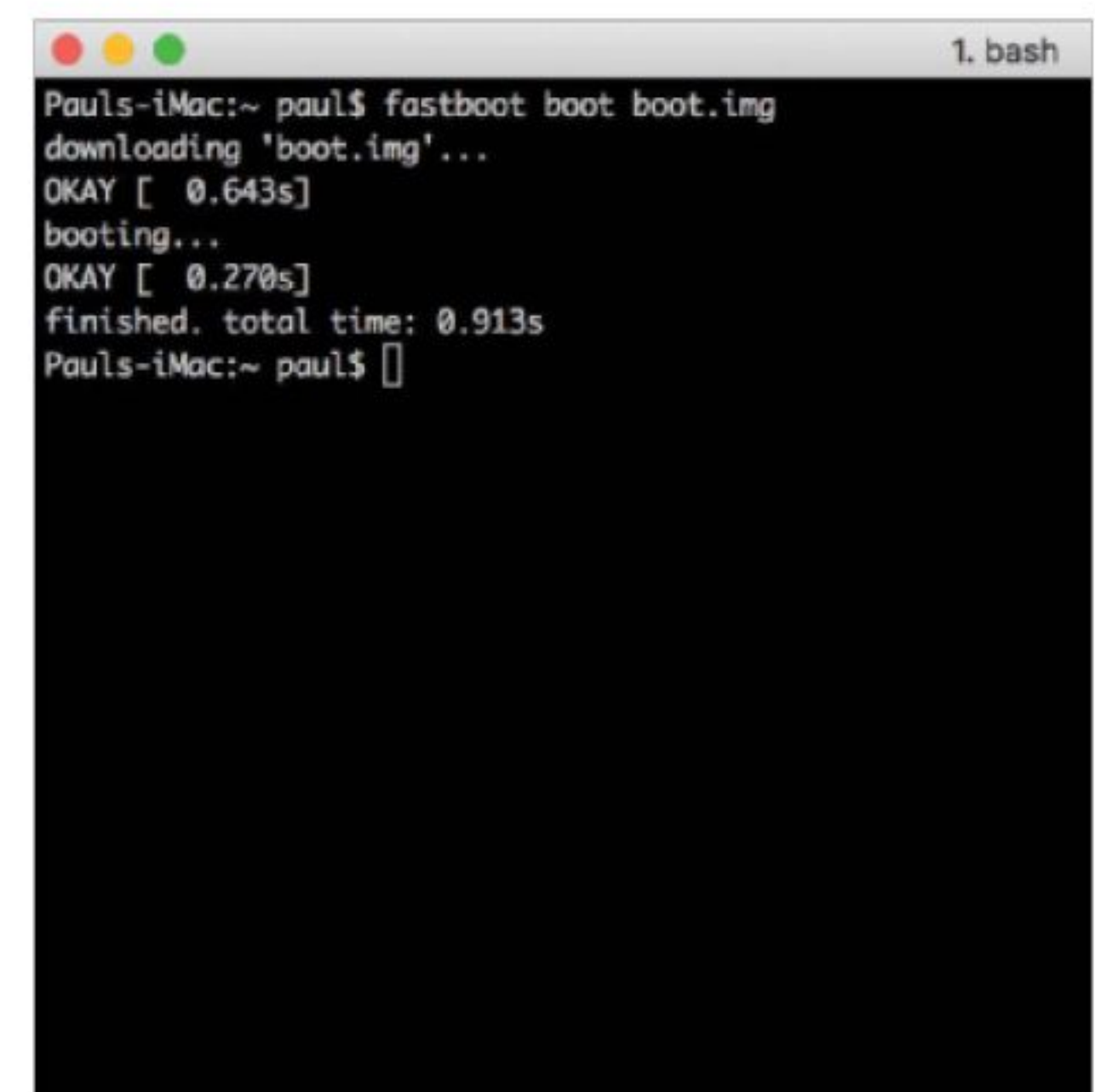
## 4 Build the source

Once you have the source ready to go with the config, you should install the build tools packages (`apt-get install build-essential kernel-package libncurses5-dev`) and then you are ready to make the kernel. Use `make -j<cpucore>` to build using multiple cores.



## 5 Package into a boot image

When you have the built kernel, you will need to use a stock ROM backup to get the regular boot image, then use a tool such as `mkboot` to extract the image into its component parts. Next replace the kernel file, rebuild and you're ready to test.



## 6 Flash and test

That's it, you're now ready to test! It's a good idea to use `fastboot boot` (provided your device supports it) before you flash, in case there is a problem with the image and it doesn't boot. Remember if you publish your kernel, you should make the source available too.



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## status update

Which devices are best for the hacking scene?

### HTC HD2

**Rooted?:** Yes

**Active development**

Low

Other than iOS, this phone will run anything – even Android Lollipop. A powerhouse for hacking, you should already own one.



### LG Nexus 5

**Rooted?:** Yes

**Active development**

High

With high-development activity and a collection of tweaks, hacks and ROMs, you'll have fun and learn a thing or two with this device.



### Samsung Gear S2 Watch

**Rooted?:** Yes

**Active development:**

Medium

It may run Tizen rather than Android, but this watch can be rooted with Odin, just as you would unlock any Samsung phone or tablet.



### Amazon Fire

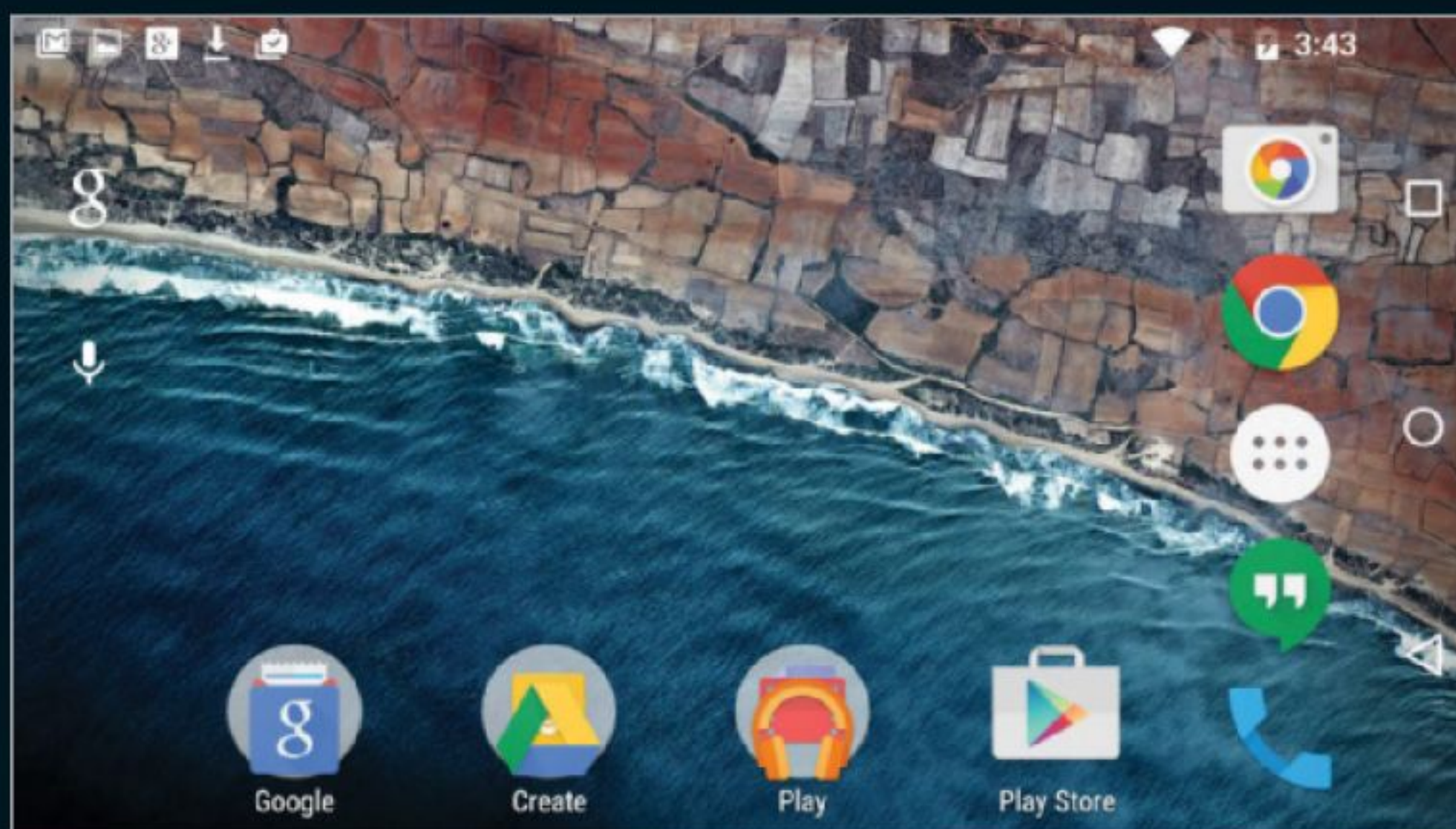
**Rooted?:** Yes

**Active development:**

Several hacks and custom ROMs are available to replace the walled garden of Fire OS. Most models can be unlocked using different methods.



# Tips & Tricks



You can get a homescreen in landscape mode on Android M

## Enforce landscape mode in Android M

Did you upgrade to Android M and find that the promised landscape home and lockscreens were not available as promised?

It's not clear why this was omitted, but if you were impressed with this feature and wondered where it was following the final upgrade to the full version, worry not – this tweak will show you how to restore it!

On a rooted phone, open your preferred file explorer and then search for **build.prop**. Open it up in an editor and add the following lines at the foot of the file:

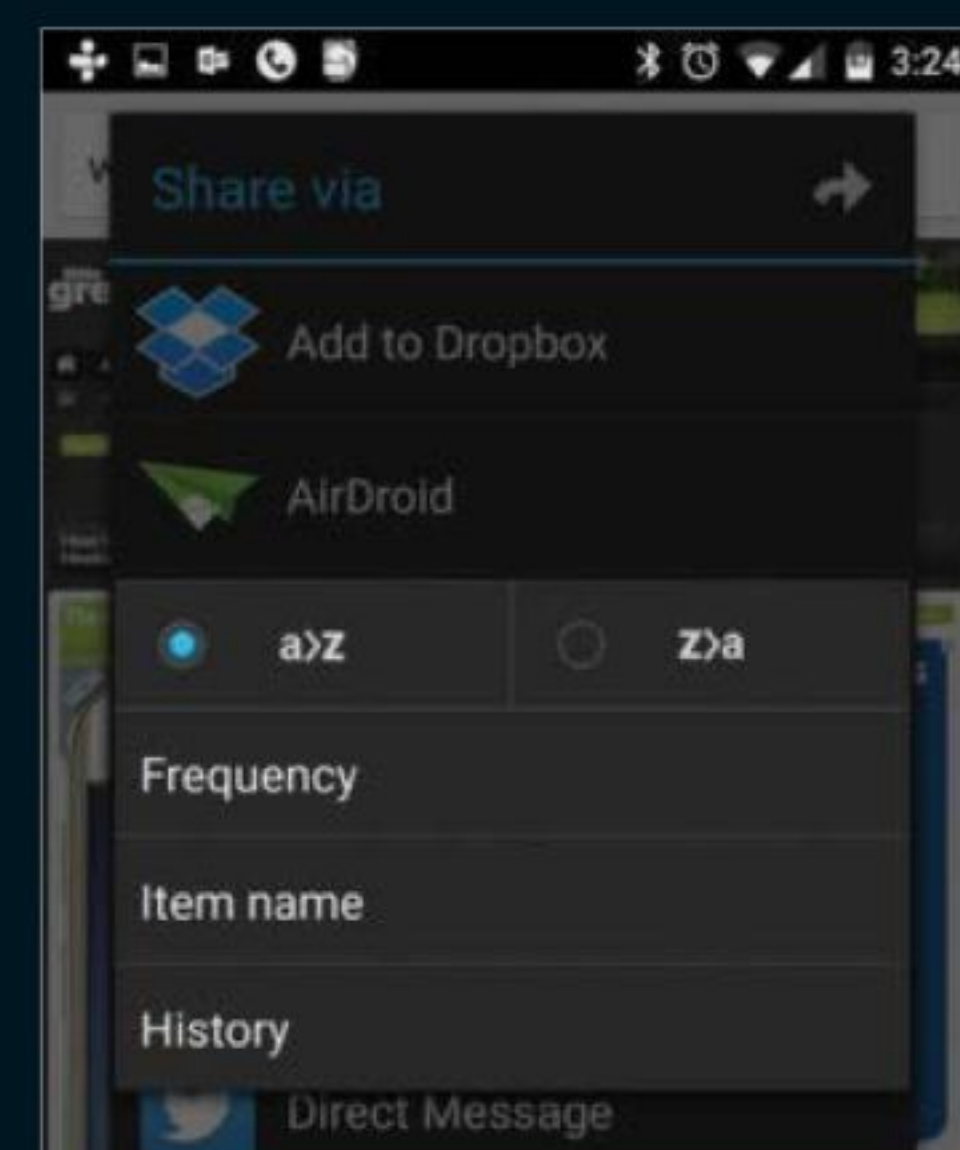
```
log.tag.launcher_force_
rotate=VERBOSE
lockscreen.rot_override=true
```

Save the file and restart your Android phone. You should now have both home and lockscreen rotation, with the landscape view arranging itself relatively neatly.

Problems? Try adding a blank line between the two commands. Failing this, use a third-party launcher such as Nova Launcher.

## Get Marshmallow-style sharing

Android Marshmallow brings a bunch of useful new features, including a streamlined sharing menu that makes sharing your favourite pages and articles so much easier. Whether you're sharing via email, showing friends on Facebook, Twitter or logging the link in a reader service such as Instapaper, the new sharing menu is worth taking a look at.



Save time and streamline your sharing

However, if Android M isn't available to you, then you'll need to find a way of refreshing the sharing menu into a usable tool. While apps like Fliktu: Share Fast (£1.54/\$1.99 on Google Play) are a strong option for replicating the Android M look, the key thing about the new sharing menu is how it optimises by the apps you regularly share.

As a result, you should install App Chooser (available from XDA-Developers.com) to customise your sharing list. This tool lets you remove unused sharing methods and sort by name or frequency of use.

## Streamline search with Google Now

One of the most useful features of Android M is Google Now on Tap. This

## quickhacks

### How to get Marshmallow on a Nexus

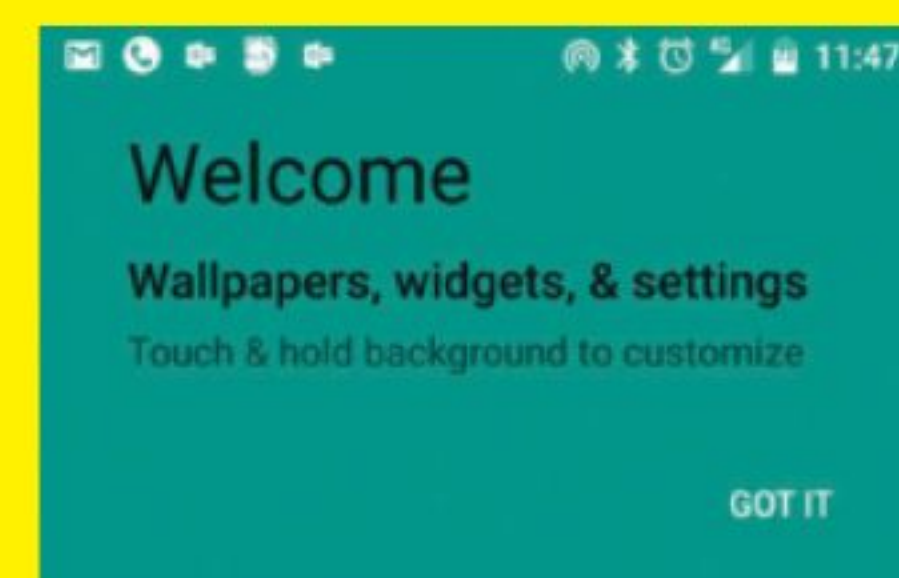
Marshmallow's rollout is so far typically slow, but Nexus 5, 6, 7, 9 and Player owners can upgrade manually. Begin by searching XDA-Developers.com for Minimal ADB and Fastboot, then download and install on your PC.



**1 Download Android M**  
From [goo.gl/OALhao](http://goo.gl/OALhao) download the stock ROM for your device. Extract the contents to C:\Program Files (x86)\Minimal ADB and Fastboot. Open Developer Options and enable OEM Unlocking and USB debugging.



**2 Reboot and unlock**  
With the USB driver installed ([goo.gl/Wh4Gbt](http://goo.gl/Wh4Gbt)) and with a back up, run Minimal ADB and Fastboot. Enter **adb reboot-bootloader** in the prompt then (on a locked handset) follow with **fastboot oem unlock**.



**3 Install Android M**  
Now install Marshmallow. Enter **flash-all** in the command line and wait. When restarting, you'll see the new version. As it installs as an update, previous apps and settings are maintained.



## Share your tips

Got a great Marshmallow hack? Let us know!

» facebook



/littlegreenrobot  
Like us on Facebook and join our online community

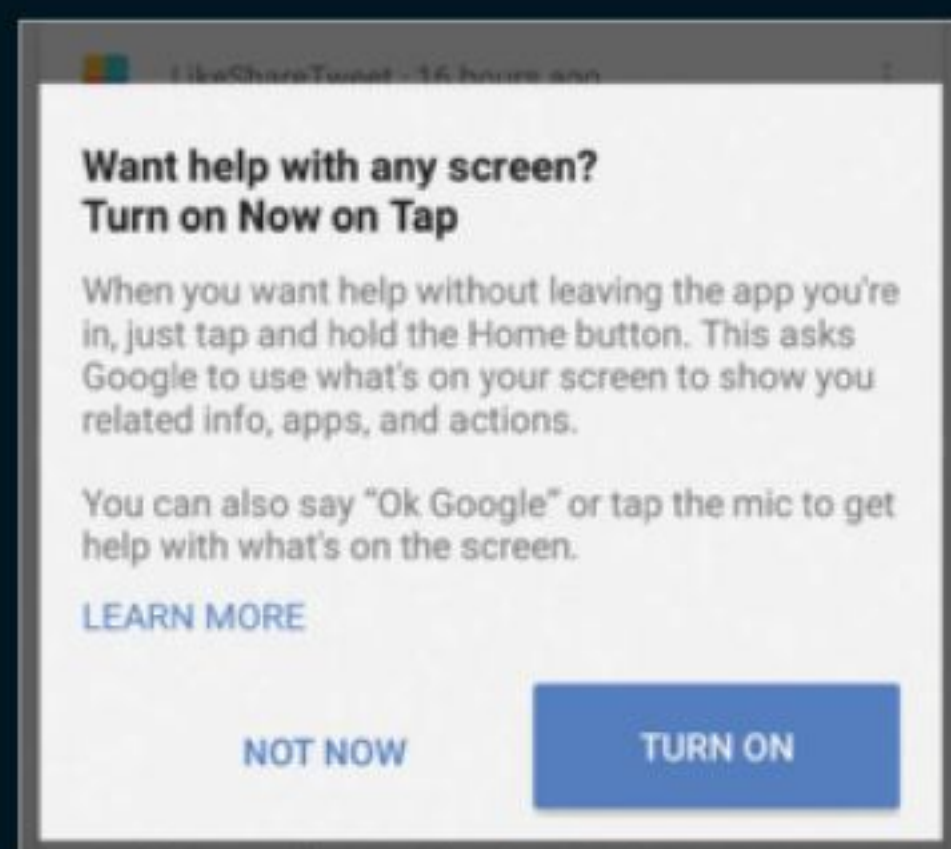
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Discovered anything good about your Android phone? Let us know!



Are you using Google Now on Tap?

is a revision of Google Now that enables instant automatic searching of whatever app or page you're currently viewing on your screen, providing you with all the relevant links on individual cards, simply by long tapping the home button.

Amazingly, few who upgrade or buy Marshmallow devices are using this feature. This is because it just isn't activated by default. In order to activate it, long tap the home button and select Turn On. You can also open Google Now, tap the three-dots menu, then go to Settings>Voice and enable Now on Tap.

Once enabled, everything on your screen becomes contextual once the home button is long tapped. This can prove useful in so many ways, from arranging a night out with friends to requesting more information with your voice.

Having trouble getting Google Now on Tap to work? Make sure your phone's language is set to English (Settings>Language and Input).

## Display remaining battery percentage

How much battery have you got left on your phone? 75 per cent? 50 per



Check your battery level instantly

cent? Perhaps 10 per cent? Without opening the notification area, finding out with a quick glance is simply out of the question.

While Android M owners can enable this in Settings>System UI Tuner>Show embedded battery percentage, and rooted users of older versions can employ the Xposed Framework to add a percentage battery label, those of you without root or Android M may feel left out.

A quick trip to the Play store will unveil Battery Percent Enabler (free); once enabled and configured this will fix the problem. Simply run the app and tap the Enable Battery Percent option, ensuring the box is ticked. You can then exit the app to see the value displayed on your battery (some users may need to reboot the device before this happens).

## Remove M's vertical scrolling

Vertical scrolling in the app drawer is a huge UI revision in Android M, one

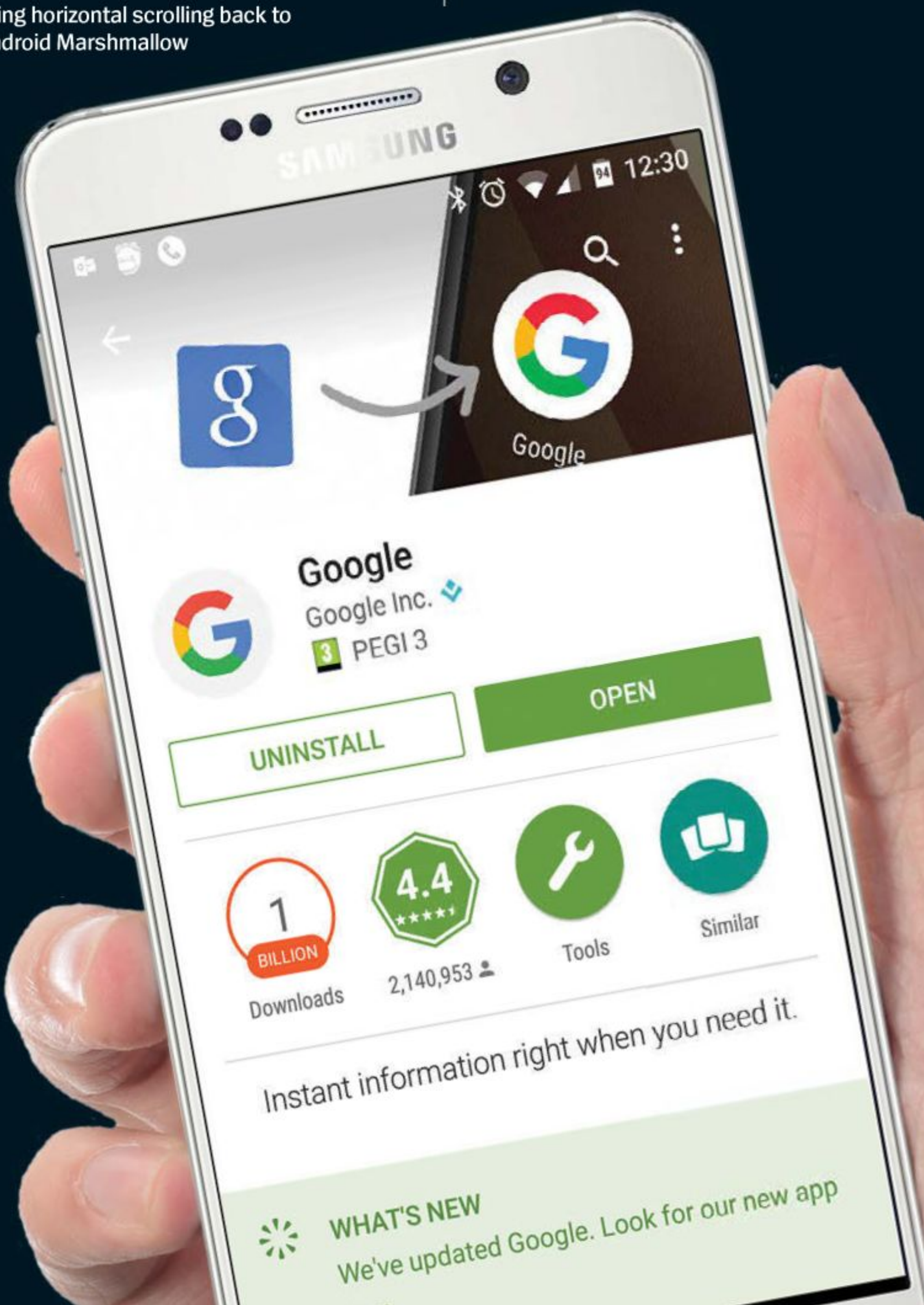
that can prove quite jarring at first. While you might opt for a third-party launcher to overcome this problem, another option exists.

Although a temporary fix, you can revert to the old left or right scrolling user interface in the app drawer by uninstalling a Google app update. Do this by opening Google Play, tapping the three-dots menu and selecting My Apps. From here scroll down to

Recently Updated and find Google, then tap Uninstall.

Agree to uninstall the app and then wait. If Android hangs for any length of time, hit the Home button or restart. When everything is back to normal, you will see a Welcome flash as if you've just installed Android or reset to factory settings. Tap the Home button to see the old-style app drawer!

Bring horizontal scrolling back to Android Marshmallow



## Hacking the easy way

Get great new features without getting your hands (too) dirty



### Black Screen of Life

**Price:** Free

**From:** Market

**Need root?** No

Save battery life on your display with this app that lets you enjoy the audio from music videos with the screen still turned off. Particularly useful if you're after prolonged video playback.



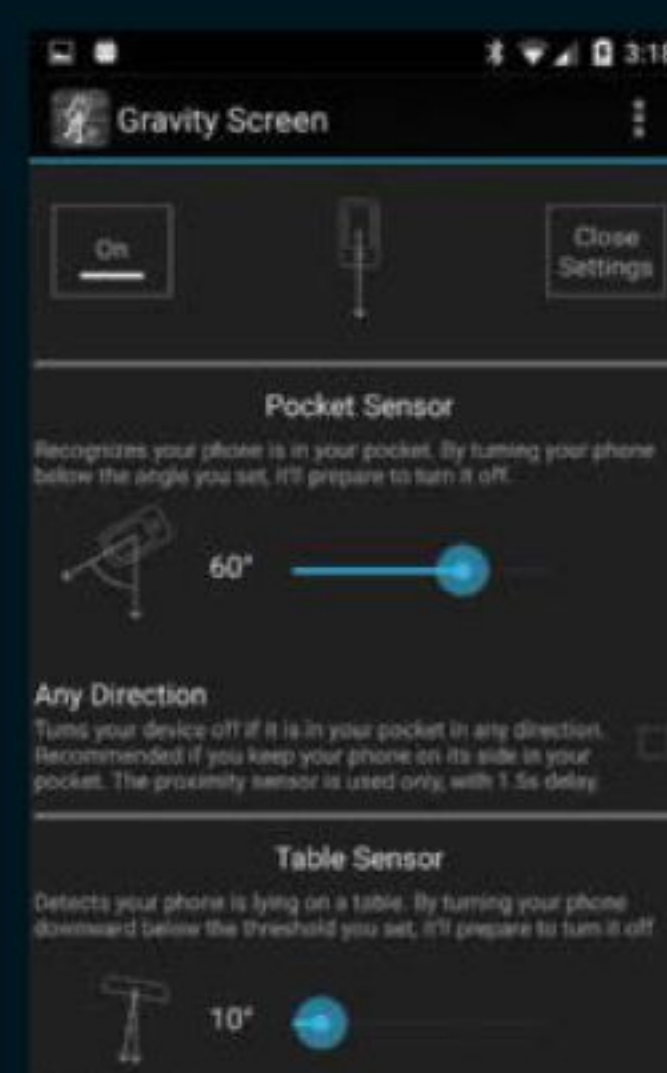
### The Marshmallow Launcher

**Price:** Free + IAPs

**From:** Market

**Need root?** No

Want that Android Marshmallow look, but can't upgrade? This replacement launcher has everything you need, but comes ad-supported. You'll need to upgrade to the £2.99 pro version to remove ads.



### Lite Flow LED & Notifications

**Price:** £1.75

**From:** Market

**Need root?** No

Reconfigure LED notifications by assigning colours to particular alerts, as well as controlling sounds and vibrations. This will help save time as you will only have to check the alerts you're interested in.

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» [www.littlegreenrobot.co.uk](http://www.littlegreenrobot.co.uk)



Works with » Android 4.0.3 and up Difficulty » Advanced

# Create your own Xposed module

Love the Xposed framework? Use Android Studio to create your very own Xposed module

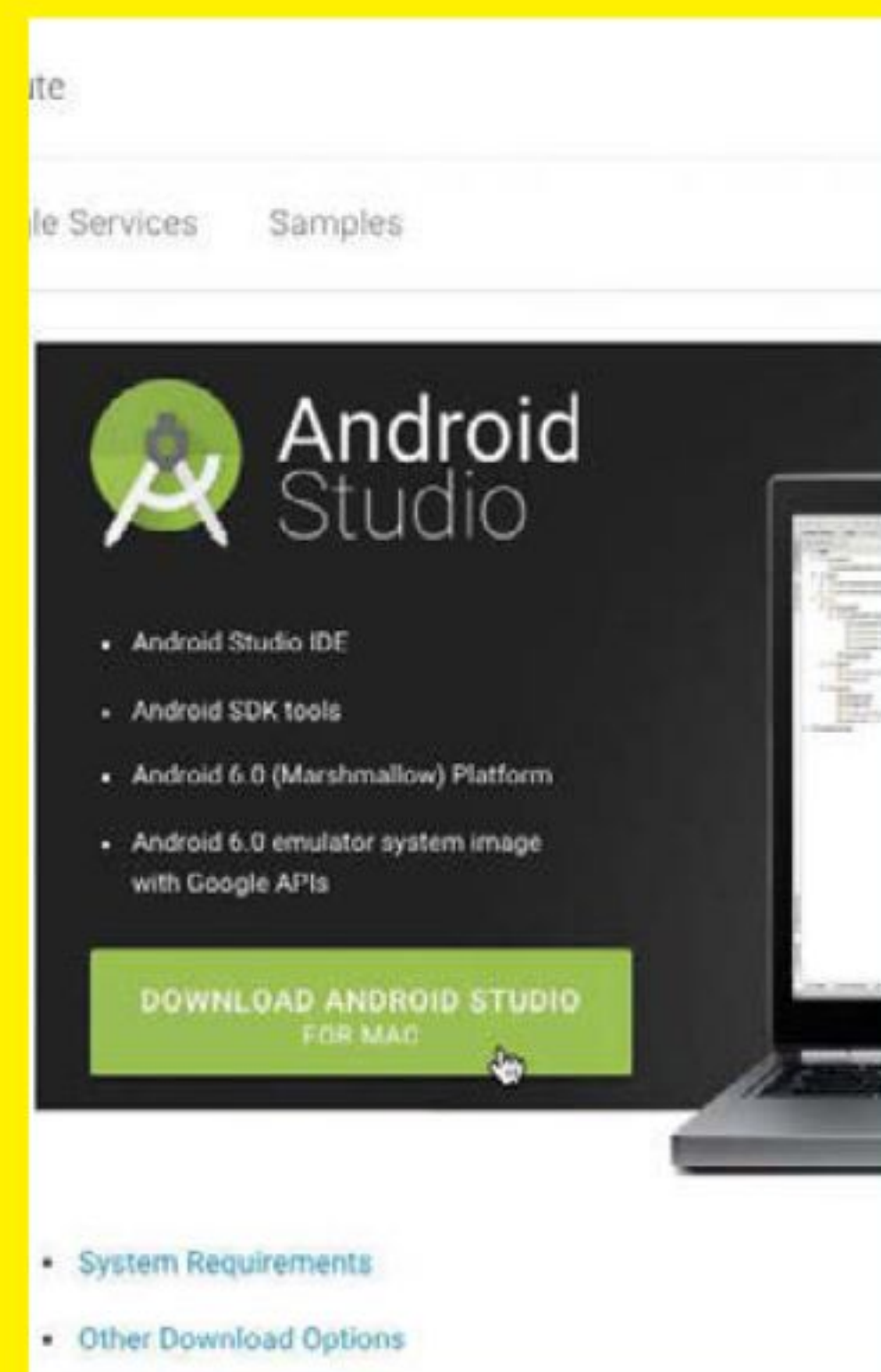


The great thing about the Xposed framework is the sheer variety of Xposed modules out there that enable you to modify your device's appearance and behaviour in countless different ways. But did you know that you can also create your own modules for the Xposed framework?

Whether you have a great idea for an Xposed module or you just want to experiment and see what Xposed development is all about, this tutorial will get you started.

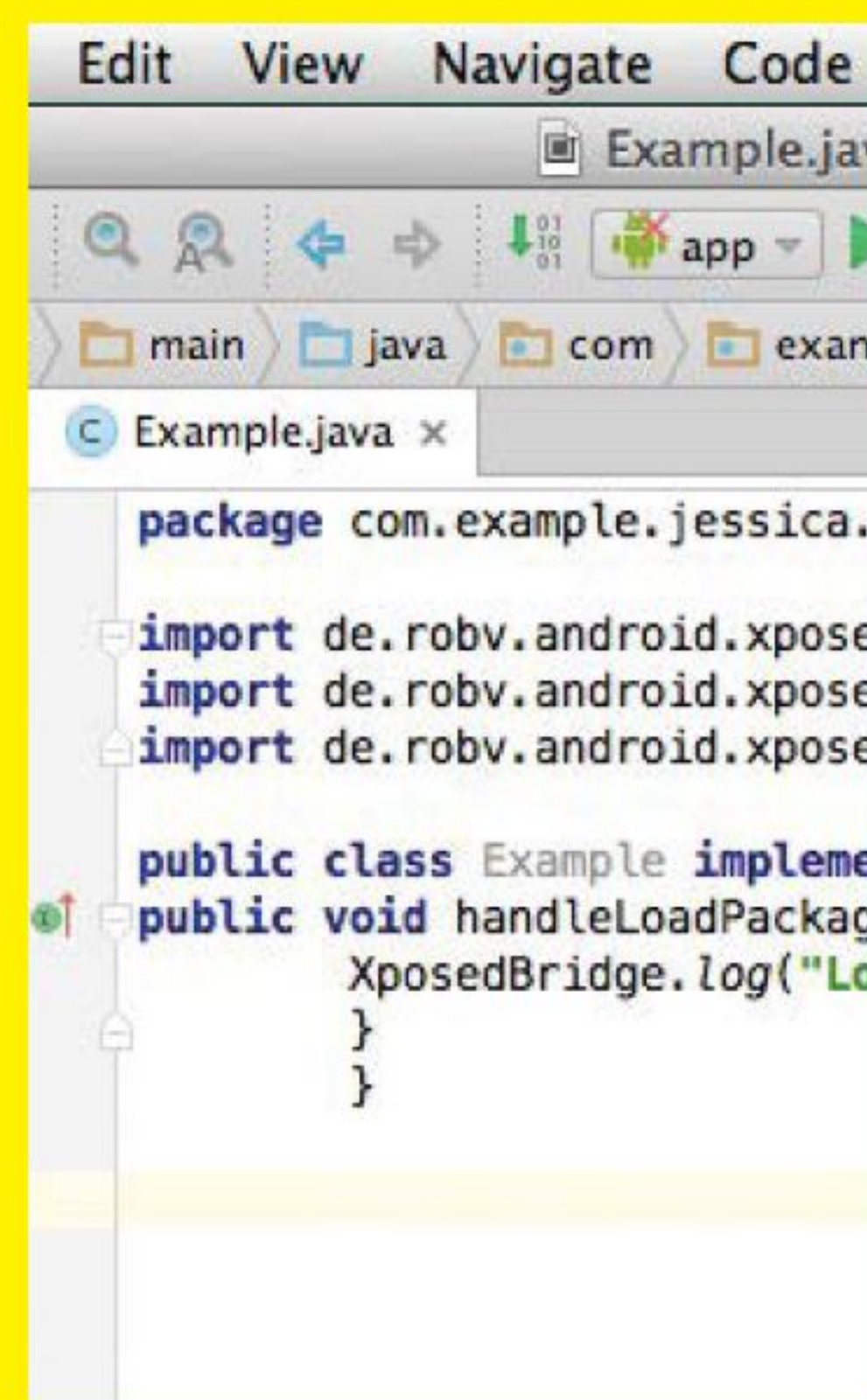
After completing this tutorial, you'll have a basic Xposed module that you can install on your Android device. This module will appear in your Xposed Installer's Modules section alongside all the other Xposed modules you have downloaded. You can even toggle your module on and off. The downside is that this module doesn't contain any actual functionality, but by the end of this tutorial you'll have your project structure in place so that you can continue developing your project if you would like to.

One thing to watch out for when creating your Xposed module is Android Studio's Project panel, which displays your project structure. Throughout the course of this tutorial you will need to open the menu in this panel's upper-right corner and switch between the Project and Android views. If you're struggling to find a particular file or folder in the Project panel, then check that you have the right view selected.



## 1 Download the Android Studio

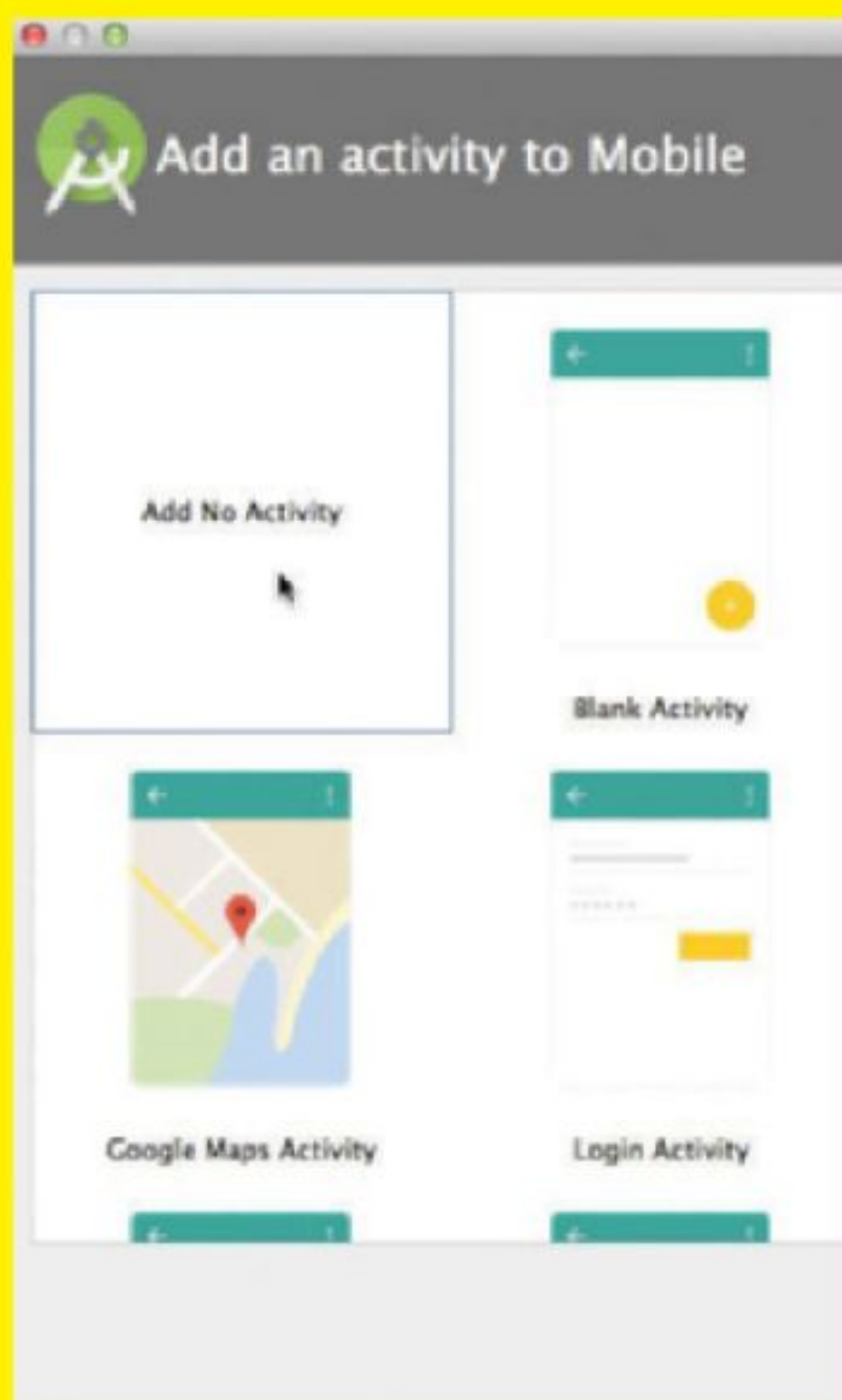
Your Xposed module will start life as an Android app project so you'll need the Android SDK and Android Studio installed on your computer. You can grab both from [developer.android.com/sdk/index.html](http://developer.android.com/sdk/index.html). To test your module, you'll need the Xposed framework installed on your Android.



## 6 Add import statements

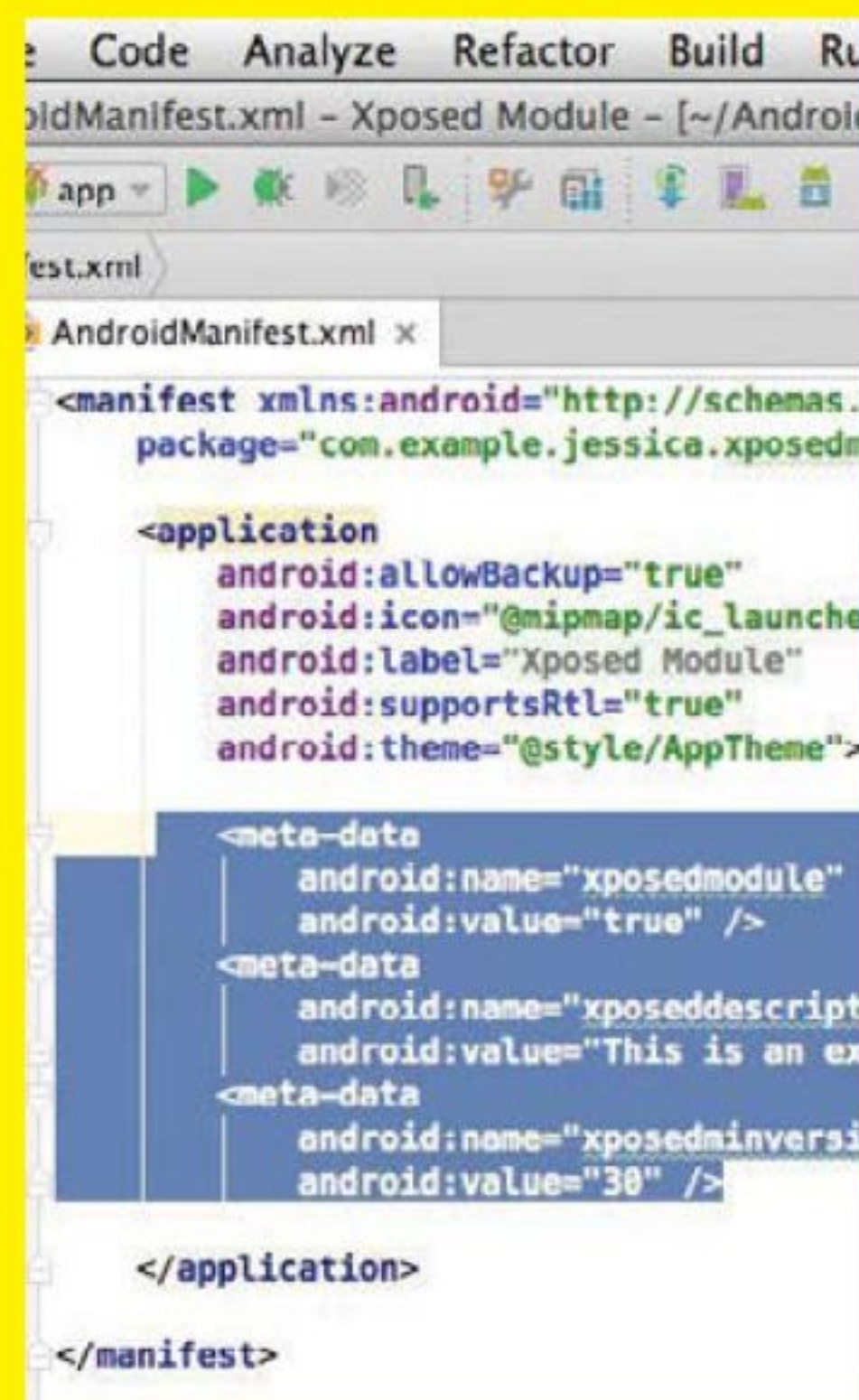
Add your import statements then implement the `IXposedHookLoadPackage`. After you've entered this information, the next step is ensuring XposedBridge knows which classes contain your entry points. So it's time to switch views again: click the Project label and select Android.





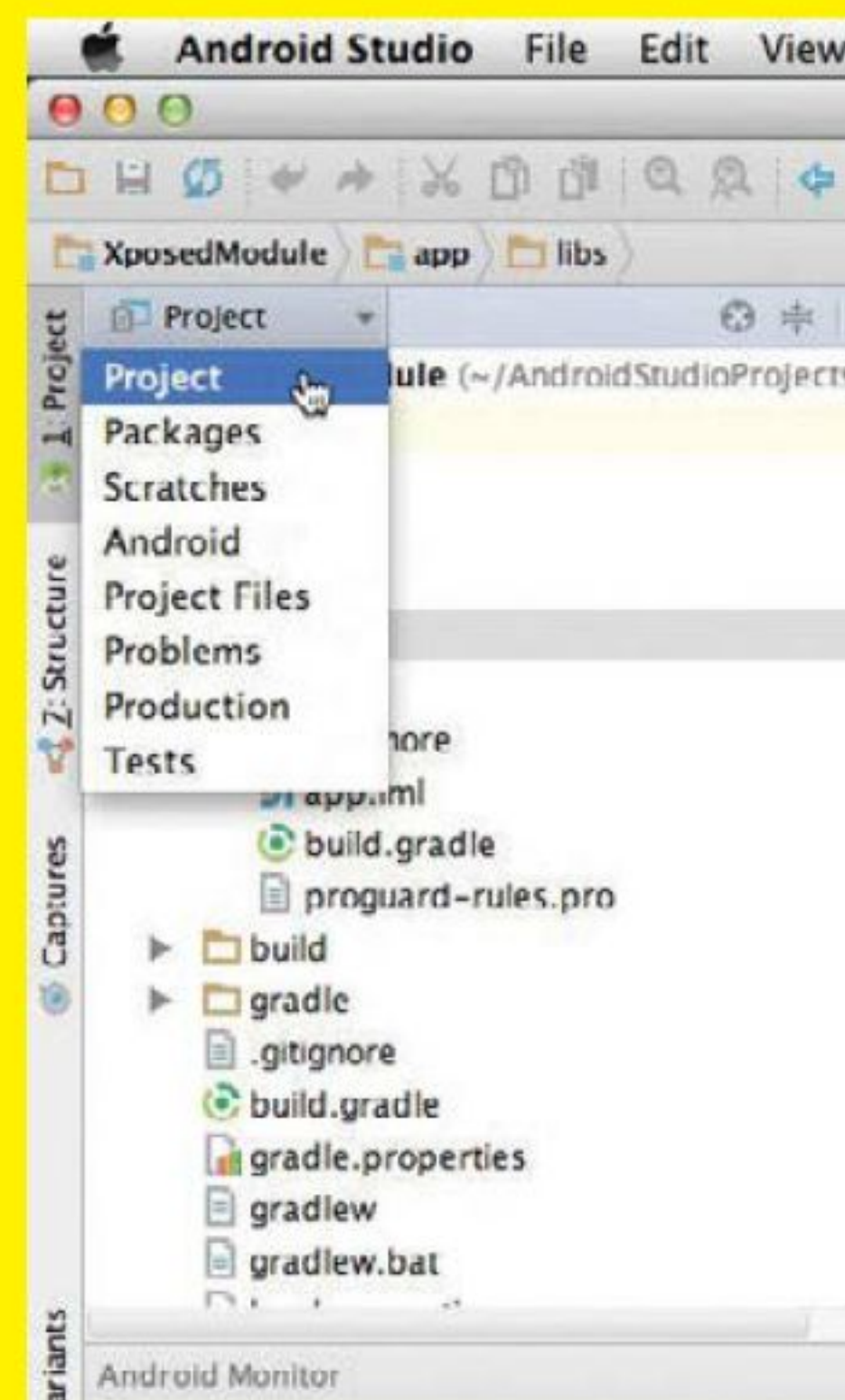
## 2 Create a project

Launch Android Studio and select Start a new Android Studio project. Give your project a name and click Next. Select Phone and tablet, and set the Minimum SDK to API 15, then click Next. Our basic Xposed module doesn't include a user interface so select Add No Activity and click Finish.



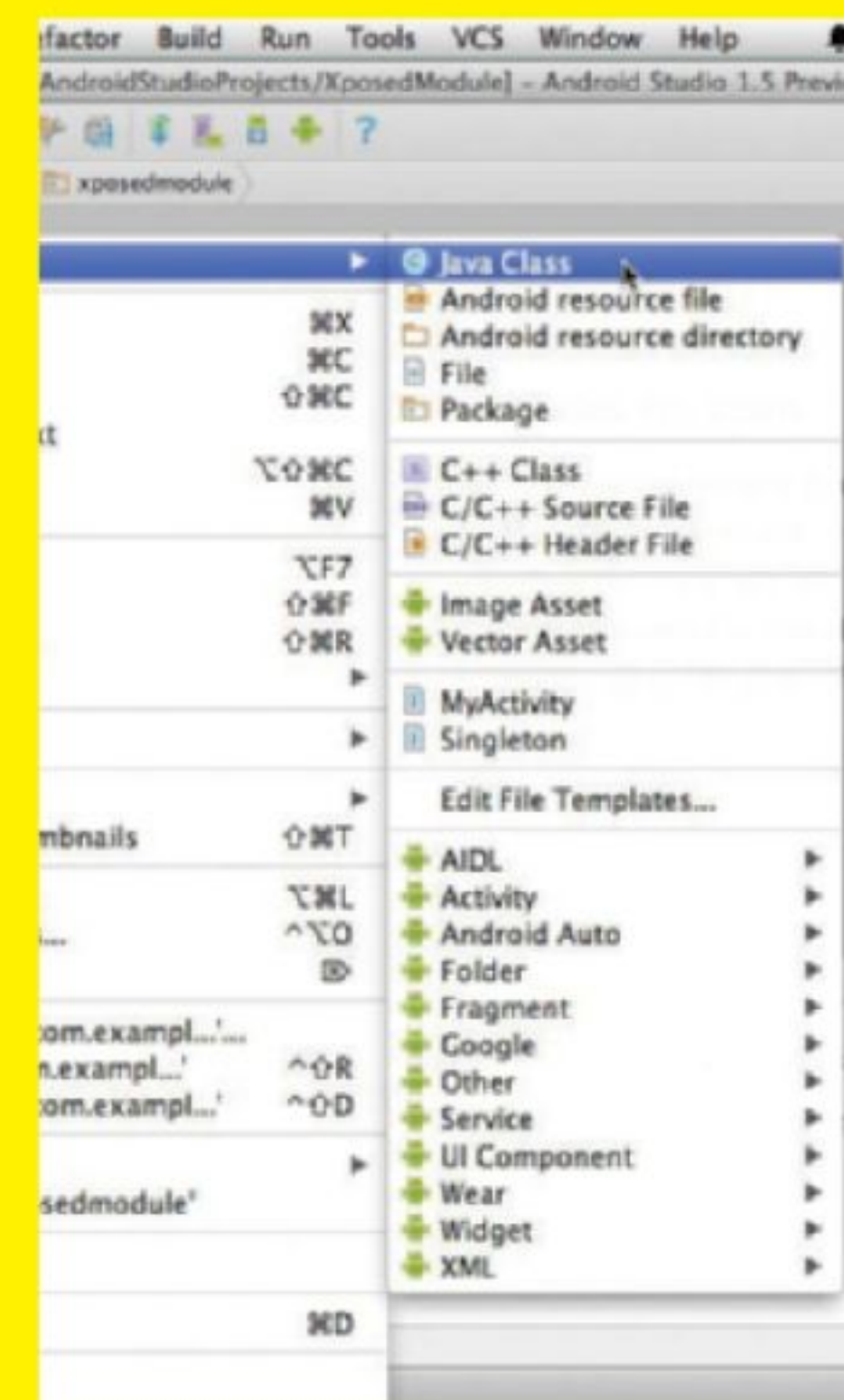
## 3 Edit the manifest

In AndroidManifest.xml, between the application tags, add:  
`<meta-data android:name="xposedmodule" android:value="true" />`  
`<meta-data android:name="xposeddescription" android:value="This is an example Xposed Module" />`  
`<meta-data android:name="xposedminversion" android:value="30" />`



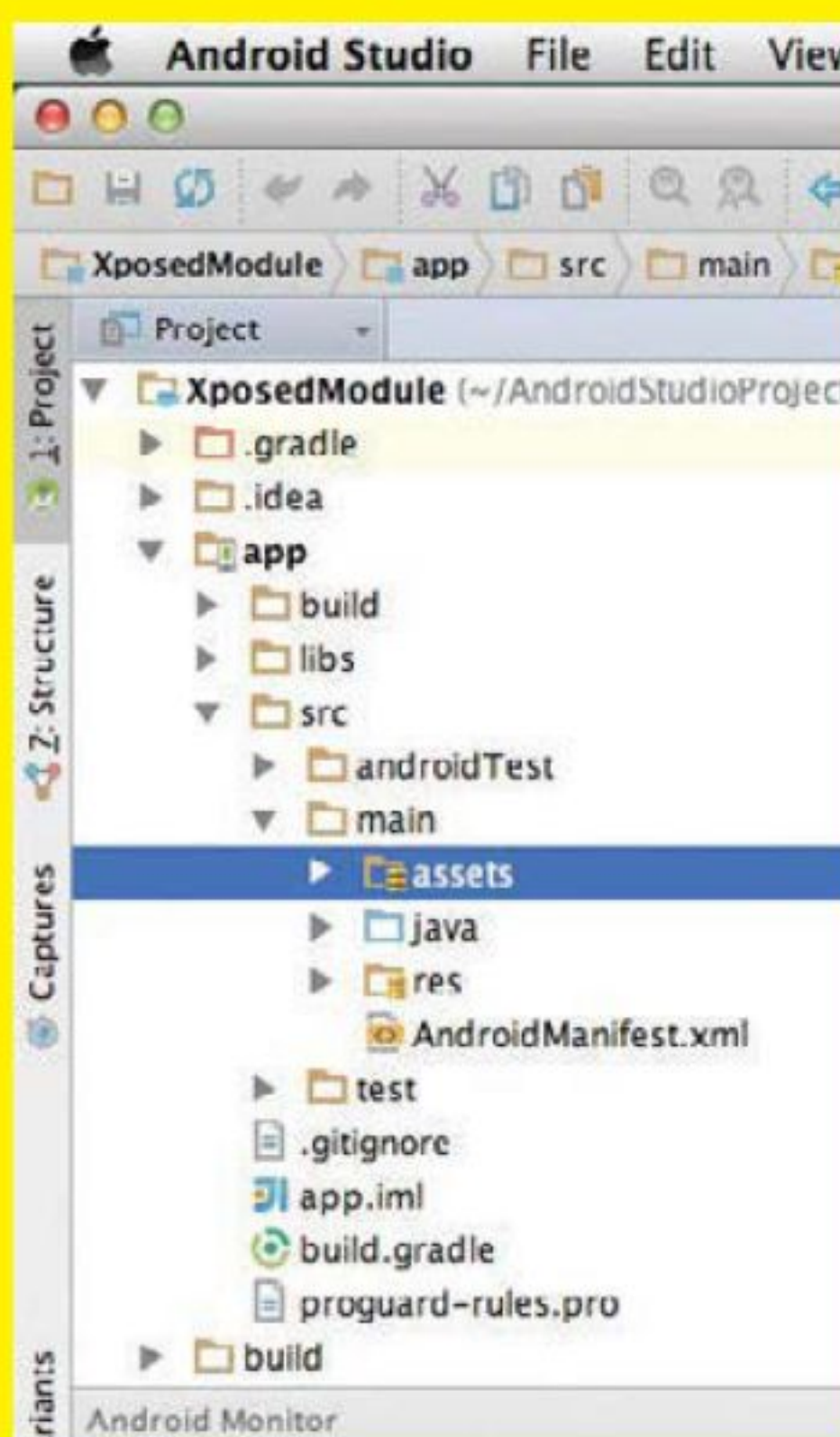
## 4 Switch views

Download the XposedBridge API from [goo.gl/6mg8s1](http://goo.gl/6mg8s1). In Project view, click the Project label and select it from the drop-down menu. Open the apps/libs folder. Drag and drop the downloaded XposedBridge jar file into your project's libs folder. Then open the project-level Gradle Scripts/build.gradle file.



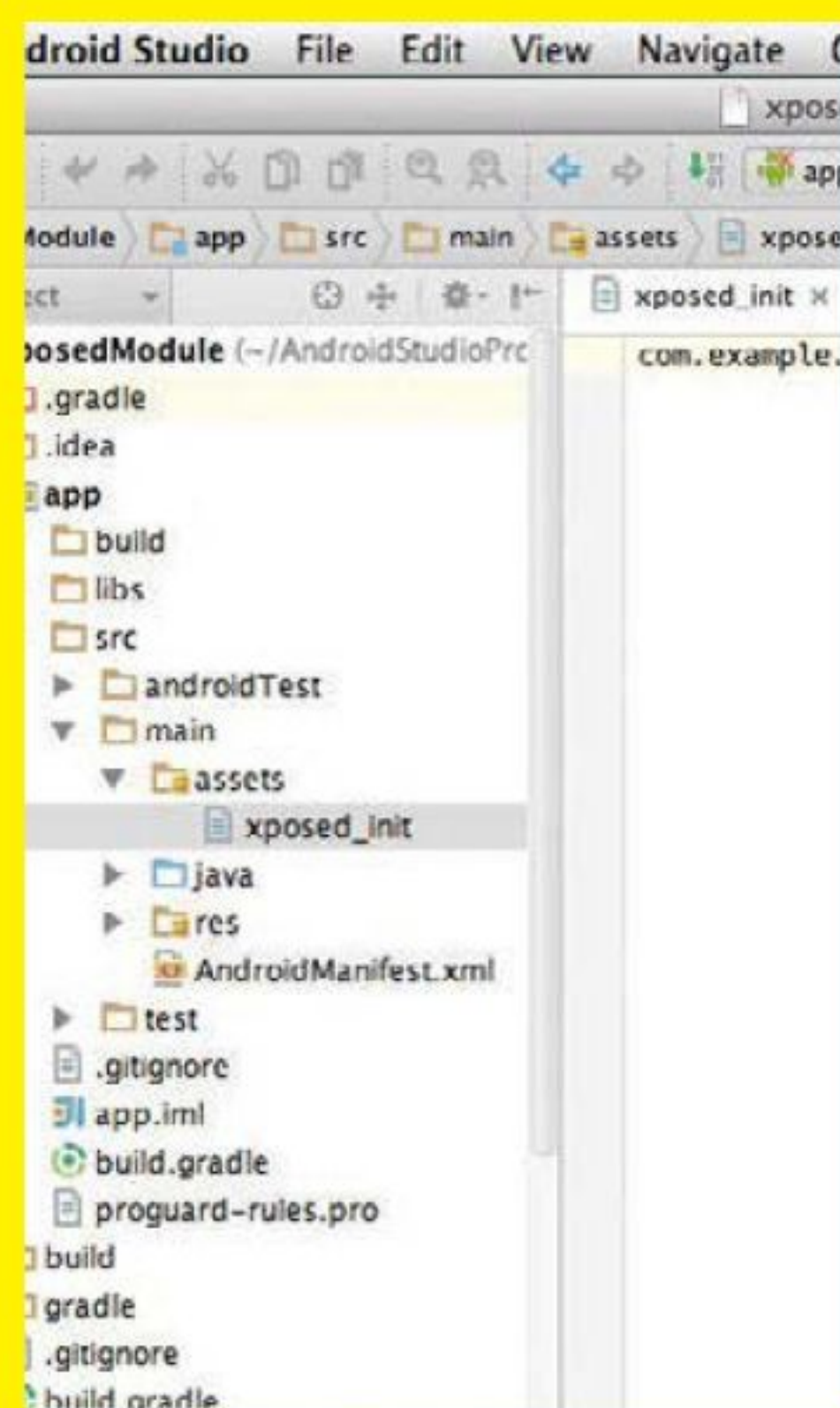
## 5 Create Java class

Find the file's dependencies section and add compile `fileTree(dir: 'libs', include: ['libs/XposedBridgeApi-54.jar'])`. Open the project's Java folder and right-click the project's package name. Select New followed by Java Class and give your class a name. Select OK and open your new Java class file.



## 7 Create a new assets folder

Open your project's src/main folder. Right Click Main>New, followed by Directory. Name the directory Assets and then click OK. Right-click your assets folder and select New, then File. Give this new file the name xposed\_init. When prompted select Text and OK.



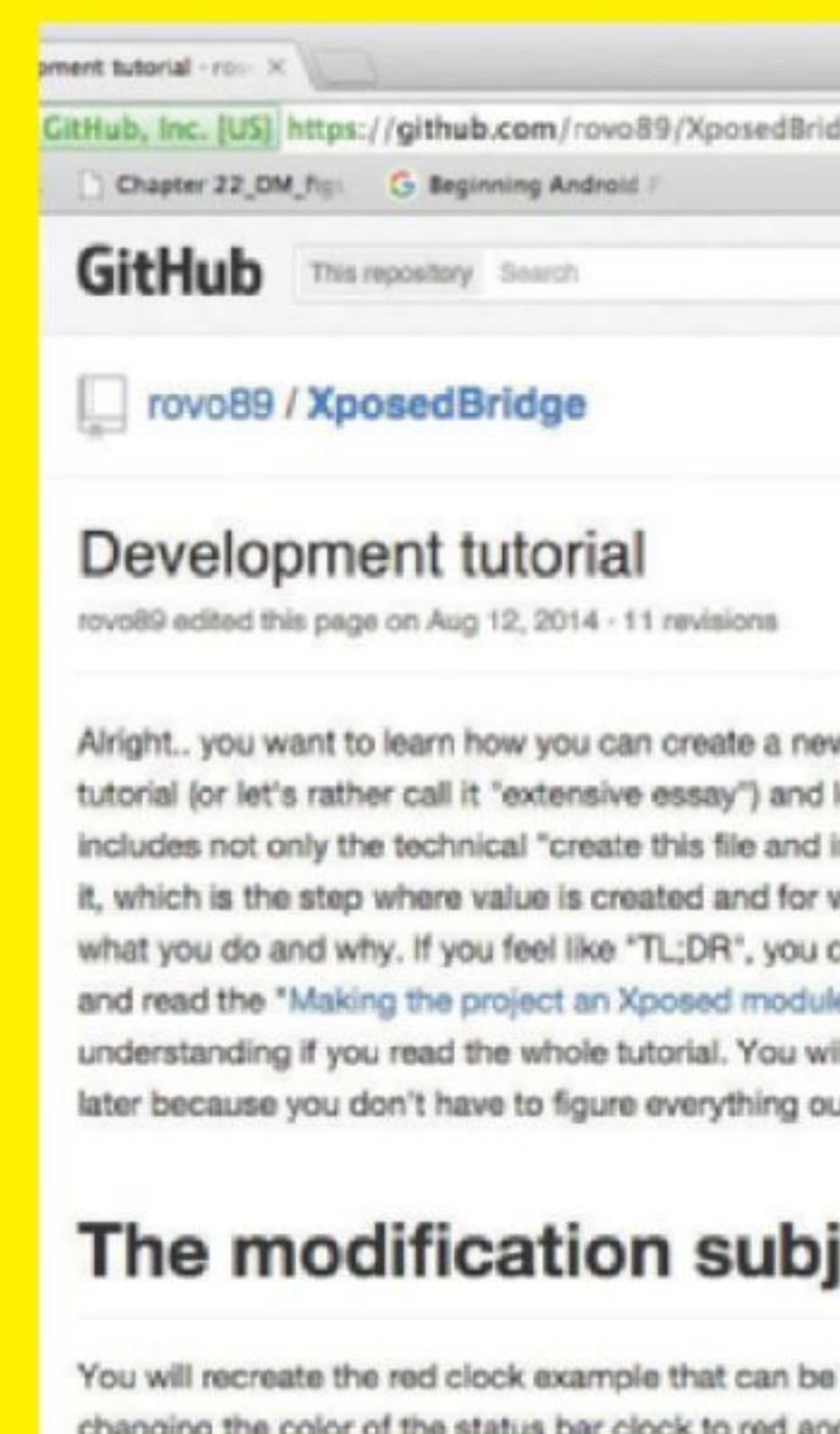
## 8 Paste the package name

Open your xposed\_init file and paste the package name of the Java class into this blank file (for example com.example.jessica.xposedmodule). Save your project. Next is testing your project, so attach your Android device to your computer using the USB cable.



## 9 Check the Xposed installer

Select Run, then Run app. A Choose running device popup will appear. Select your device, click OK, then wait a few moments. Once your Xposed module is installed on your device, launch your Xposed Installer and go to Modules. Your example module should have now appeared!



## 10 Expand your project

Now you have a skeleton project, you can add whatever features you want and then install this module onto your device or even release it to other Android users. If you want more guidance on Xposed development, be sure to check out the GitHub site at [goo.gl/qW3isi](http://goo.gl/qW3isi).



Works with » Any version of Android Difficulty » Easy

# Make Wear work with iOS

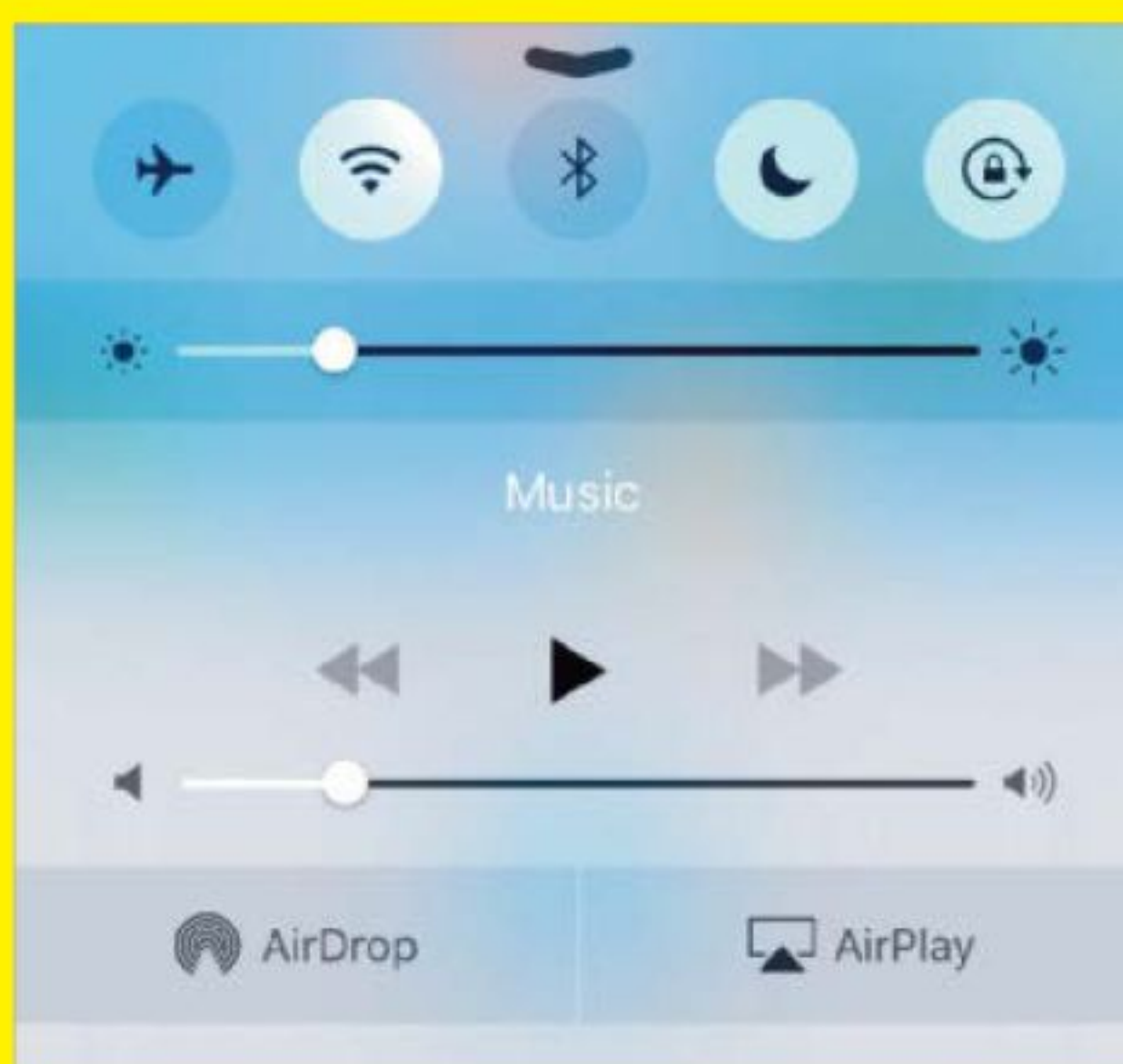
Make your Android Wear device work with an iPhone without any deep-level hacking

Google has recently released the Android Wear app on the iTunes App Store, which has had a drastic effect on the flexibility and usability of non-Apple smart watches. It means that you can use an Android Wear device to receive notifications from an iPhone and also benefit from the many Google Now alerts that are free to use. The full set of features is not currently available (they may be in time), but that does not mean that there aren't huge benefits already here. It will take seconds to set up the connection between your watch and iPhone, then a few small tweaks to have everything up and running as you require. You now have as much choice as you like and can use almost any Android Wear device with a connected iPhone every single day.



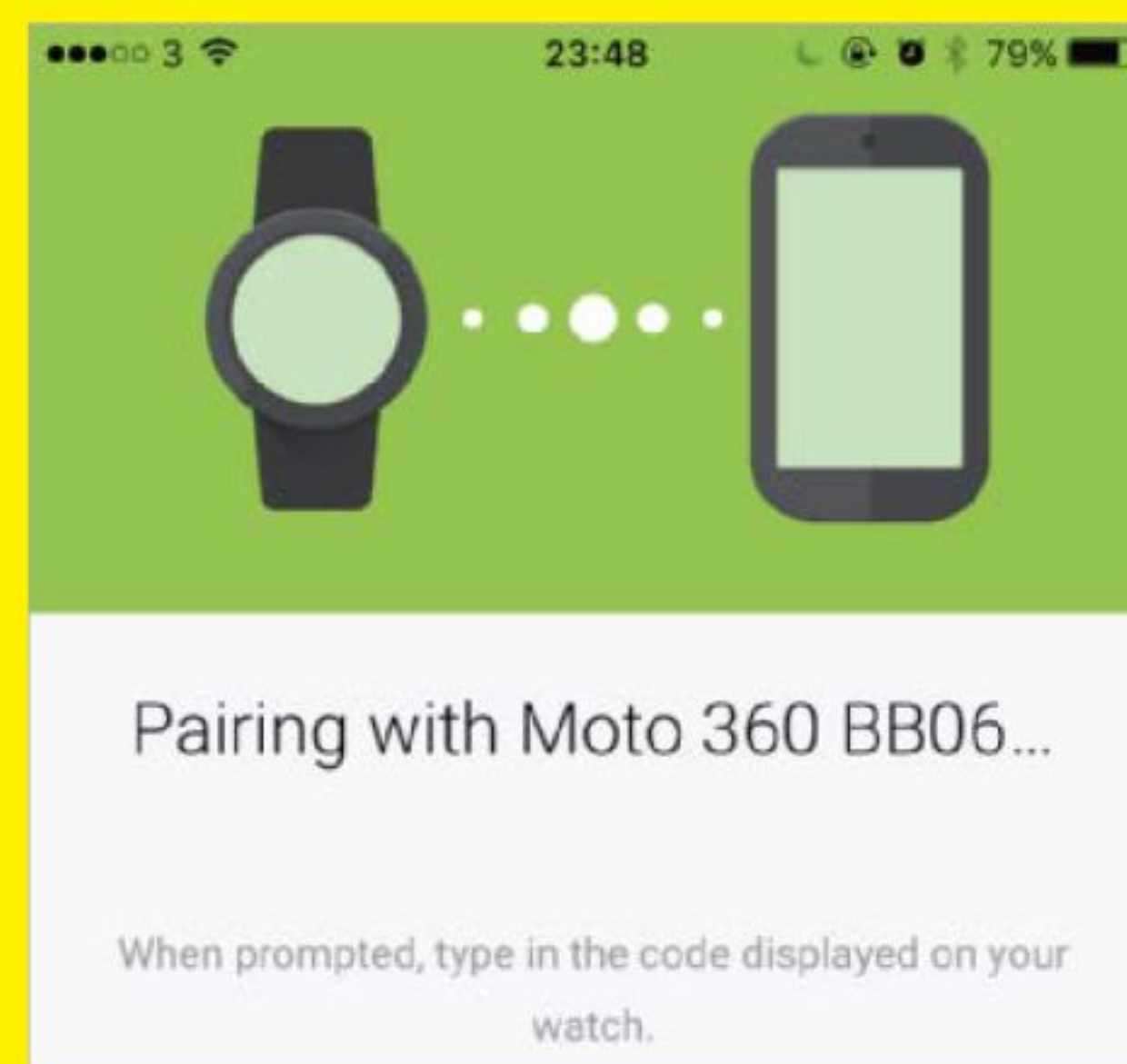
## 1 Download the app

Go to the iTunes App Store and search for Android Wear. You will immediately be presented with the right app that you can now download and install as you would any other normal app. It is free and takes up very little space on your device.



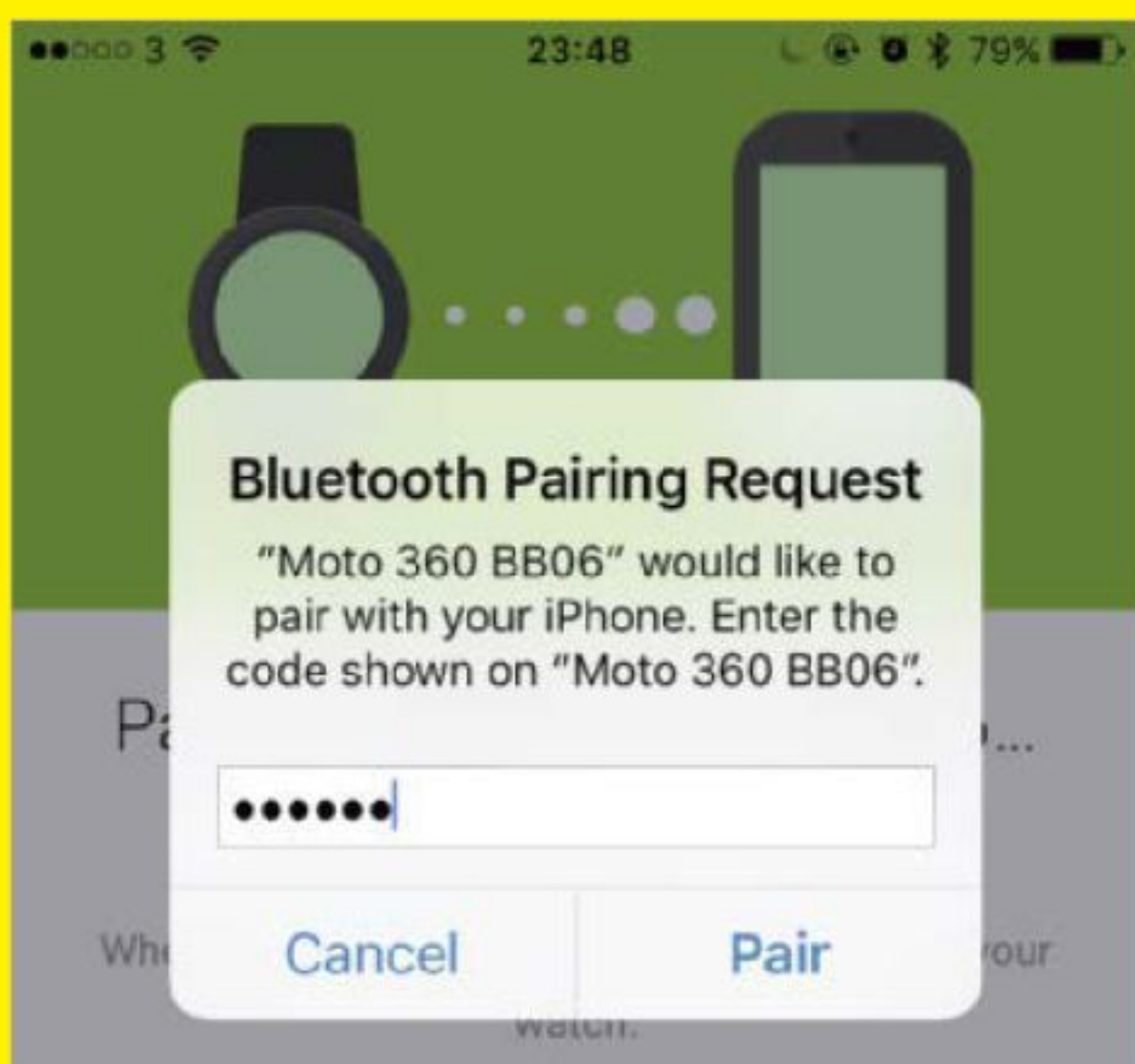
## 2 Enable Bluetooth

Before you do anything else, make sure that Bluetooth is enabled on your iPhone. This will need to be enabled at all times in order for the Android Wear notifications to work properly, but it should not use up too much battery power on either device.



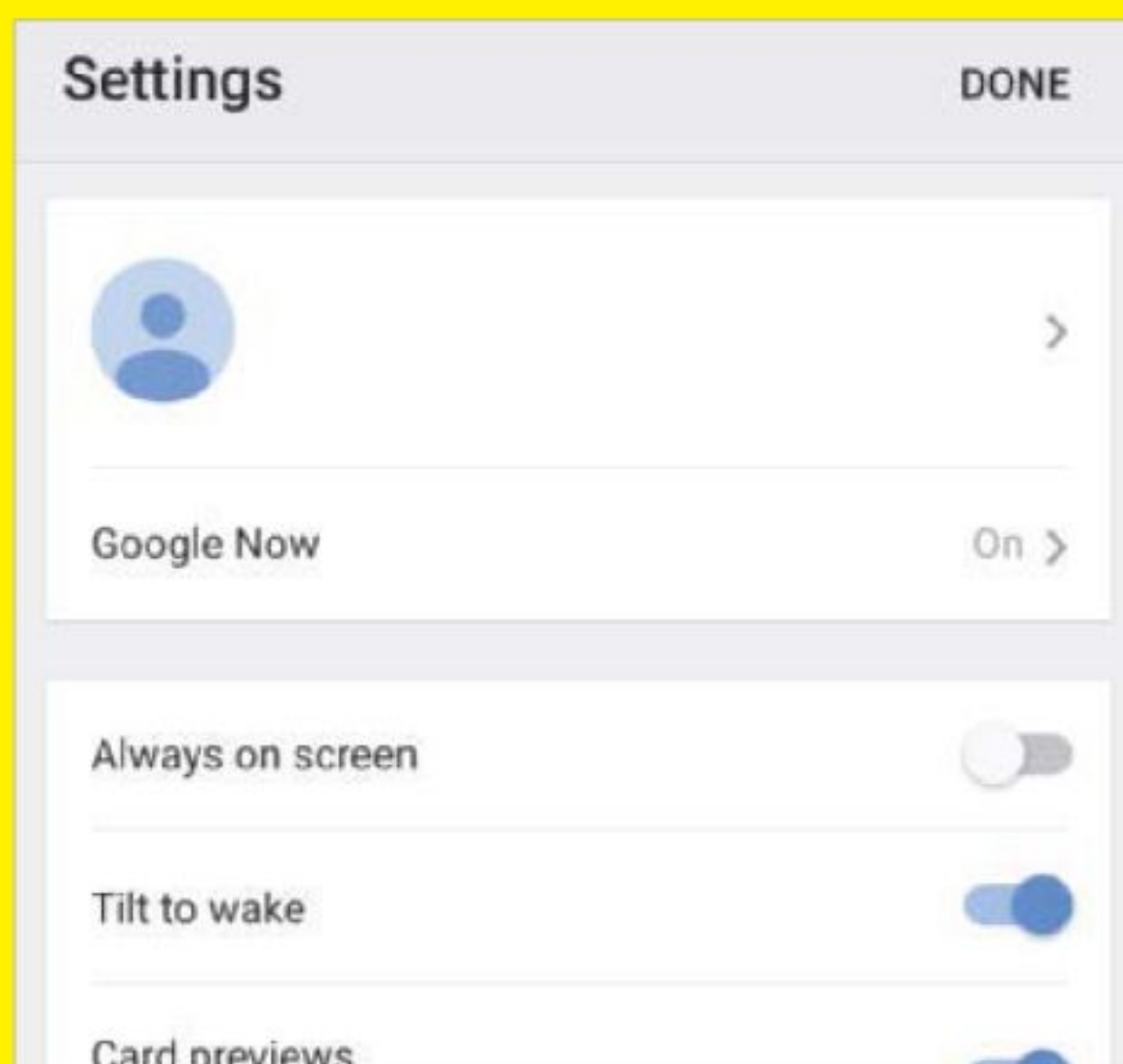
## 3 Connect the devices

Follow the instructions to connect the two devices together and then wait while the pairing is completed. The process can take some time so be patient and let it complete. You will only need to do this once for the connection to remain stable in the future.



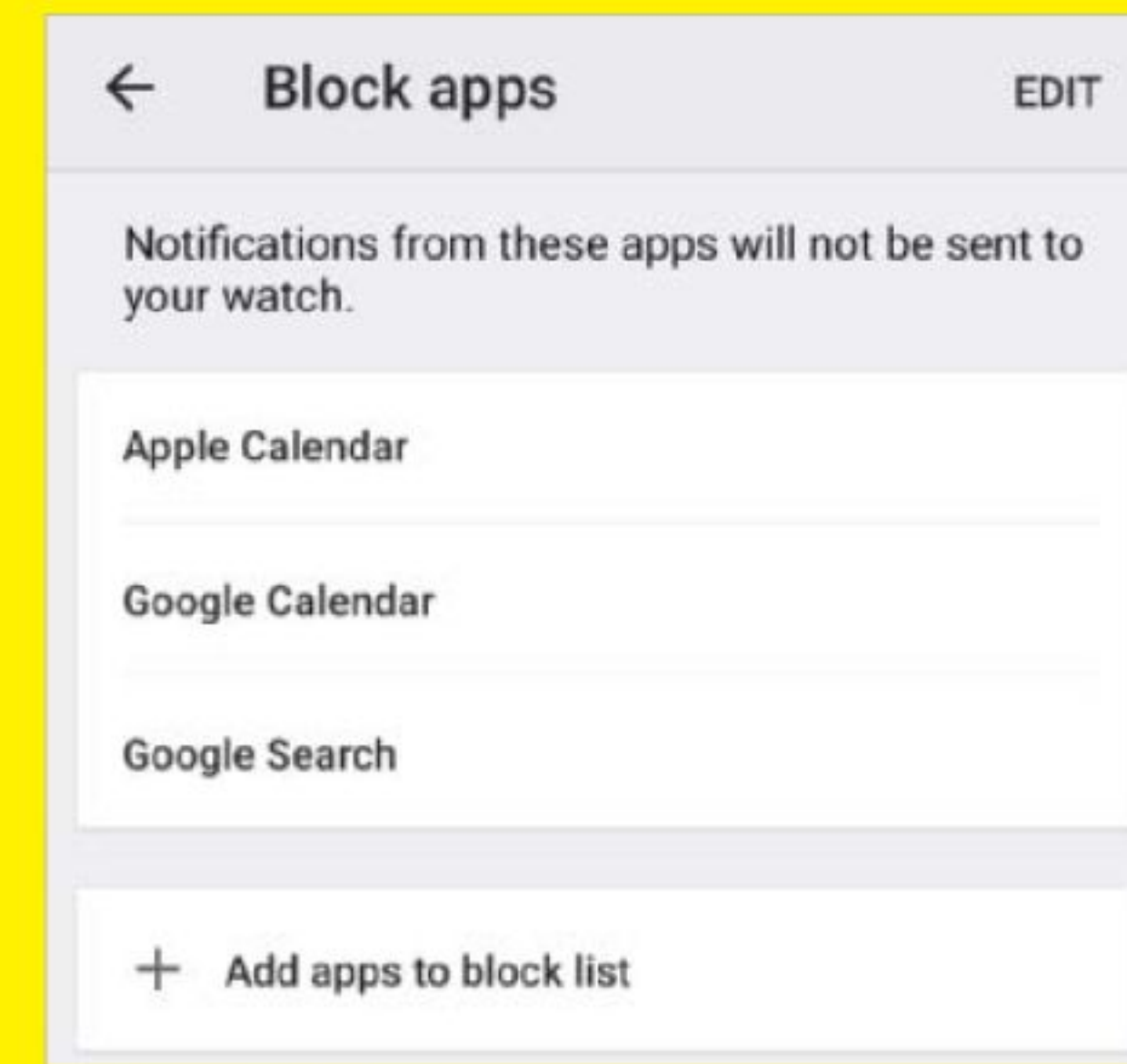
## 4 A secure setup

You will need to compare the codes on each device to make sure that they are identical when pairing the devices. At no point will the Android Wear device compromise the security of the iPhone or vice versa. You can rest easy when using Android Wear with an iPhone.



## 5 Set your preferences

Once the connection has been enabled, you will be able to set your Android Wear preferences. This includes tilt to wake, card previews and choosing whether to use Google Now or not. Almost every notification you need will be available to select from the start.



## 6 Block apps

You will also see the option to block apps from displaying notifications on the Android Wear watch. This is particularly useful if you use a third-party calendar and do not want duplicate entries appearing throughout the day. Take your time and make your choices wisely.



Works with >> ZUK Z1 running ZUK UI >> Difficulty Intermediate

# Convert a ZUK Z1 to use Cyanogen OS

Using a ZUK Z1 running the ZUK UI? Convert your device to use Cyanogen OS to get the most out of it

When we reviewed the ZUK Z1, we gave it a **four out of five score – it's a great phone**. However, it's not the easiest handset to get hold of and if you import the device from abroad, you might find that unlike the European versions – which run Cyanogen OS – your phone has the ZUK UI.

The ZUK UI is an interesting and very different take on Android, but there's no doubt that the

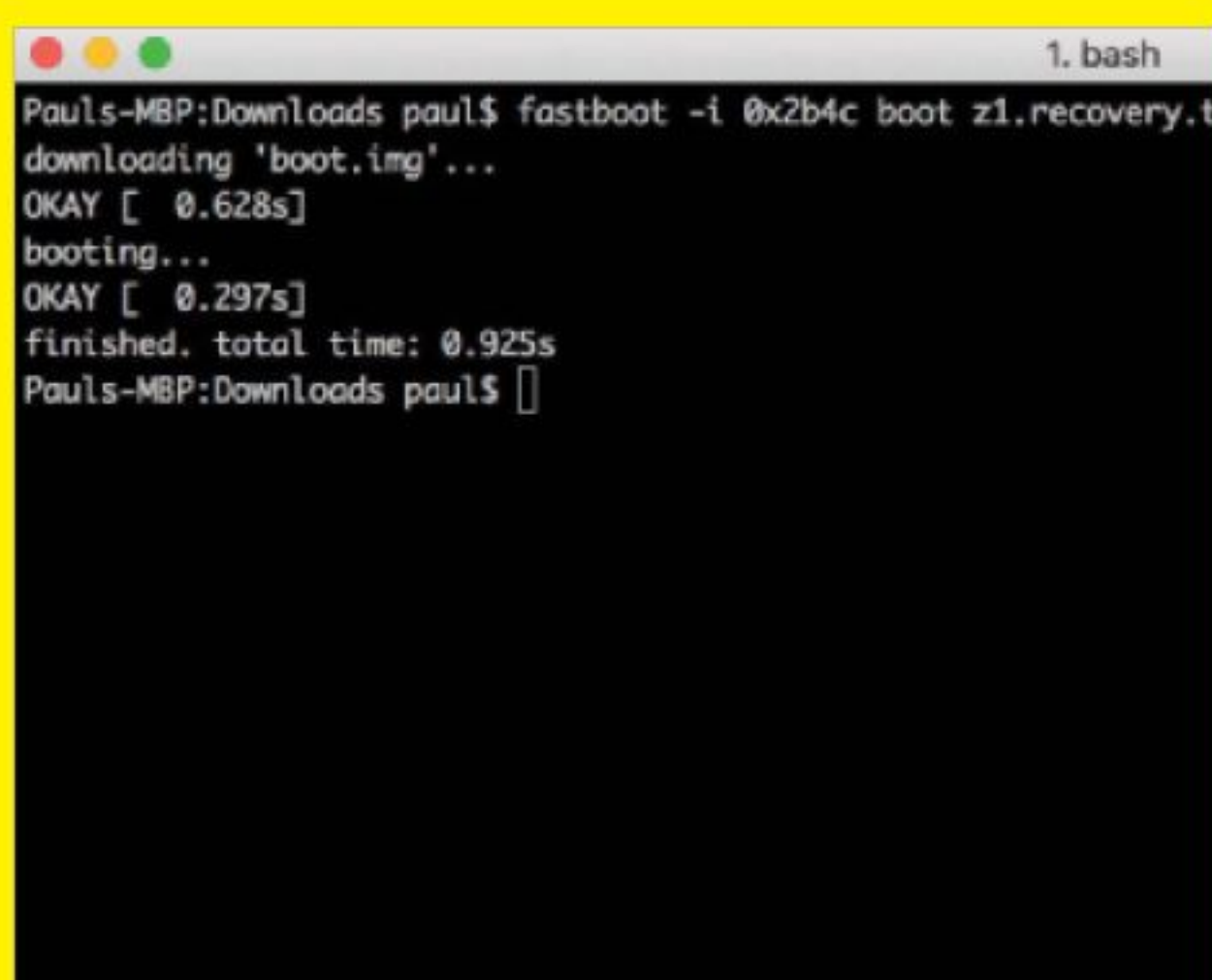
Cyanogen version is truer to stock Android and a superior experience. Switching from the ZUK UI to Cyanogen OS is straightforward, thanks to a conversion package and our guide.

The conversion isn't a one-way process so if you want to return to ZUK UI later (or if you have a Cyanogen OS device and want to try ZUK UI), a full restore package is available from the ZUK website.



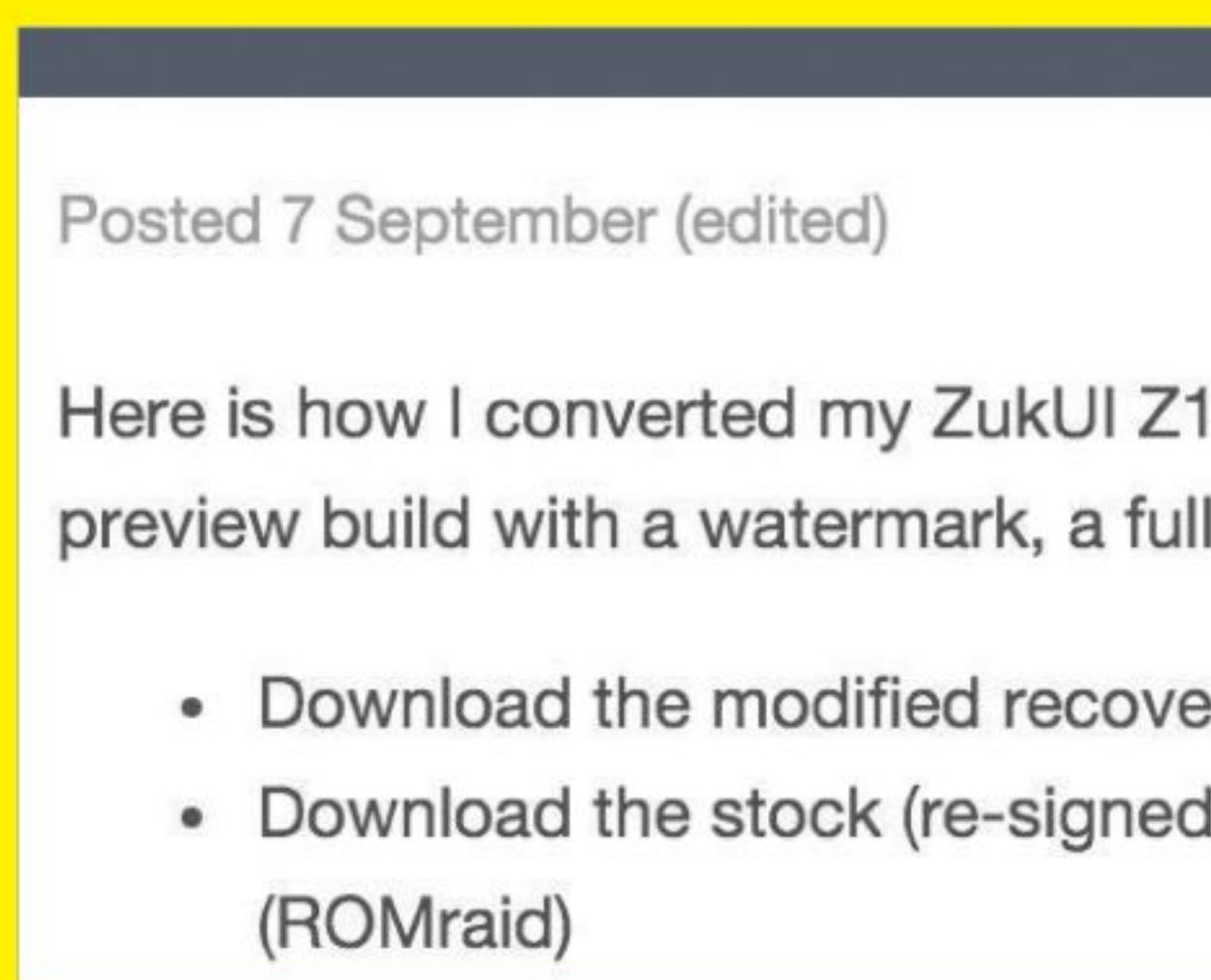
## 1 Install tools

To convert your device, you'll need a working ADB and fastboot from the command line as well as ZUK's drivers if you are using Windows (you can use a Mac or Linux machine too). The drivers can be downloaded from the ZUK site at [bbs.zuk.cn/z1/t16224](http://bbs.zuk.cn/z1/t16224).



## 4 Boot the recovery image

Once verified, the device is accessible via fastboot. Use `/fastboot -i 0x2b4c boot z1.recovery.testkeys.img` to boot the recovery image. The Cyanogen ROM uses different certificates to ZUK, so before installation, use the wipe option to avoid a boot-loop.



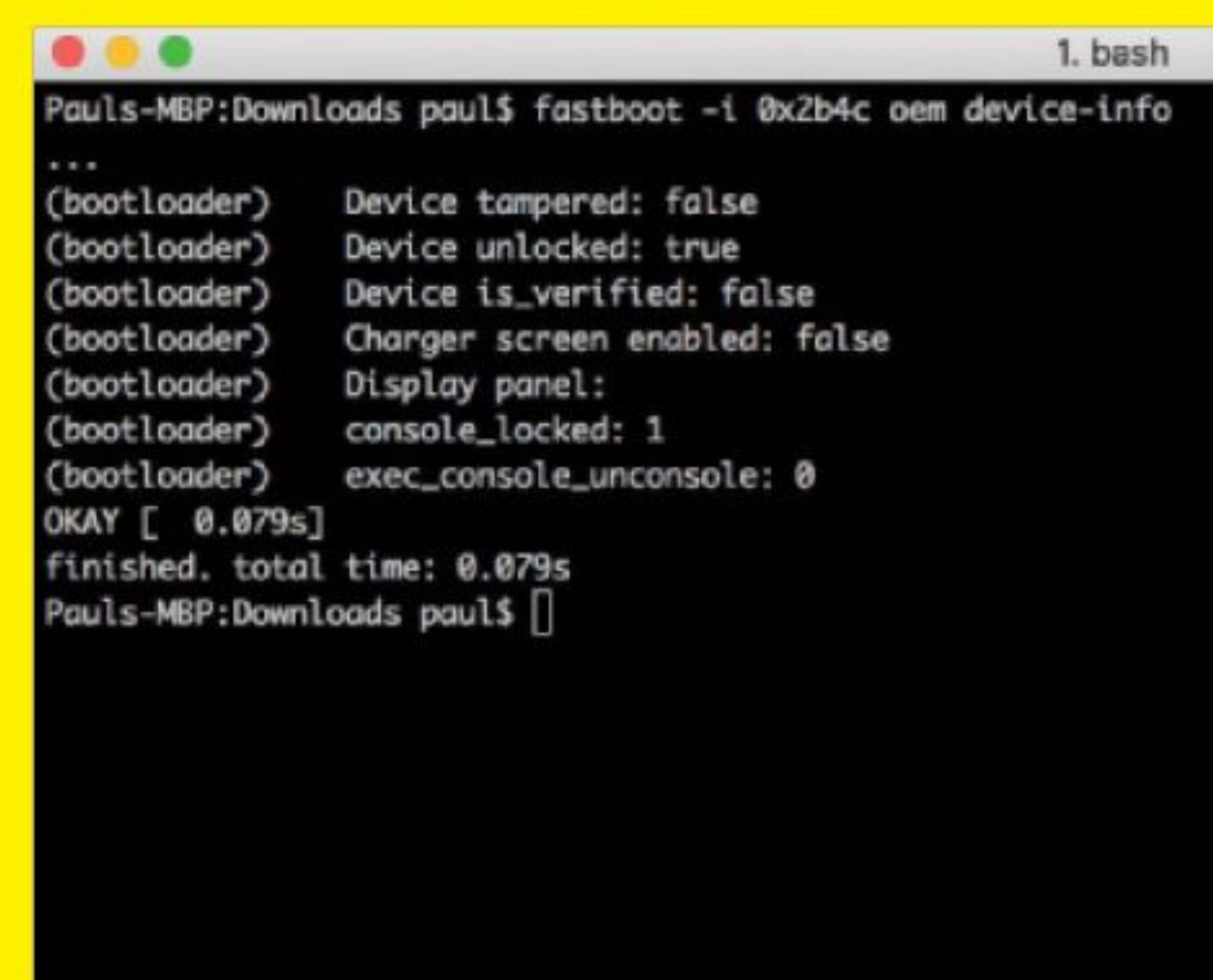
## 2 Download image files

The Cyanogen OS conversion process involved using a modified recovery image to flash the Cyanogen OS Lollipop ROM, which can then be updated over the air to the latest version. Both can be downloaded from the MoDaCo forums at [goo.gl/sreBLi](http://goo.gl/sreBLi).



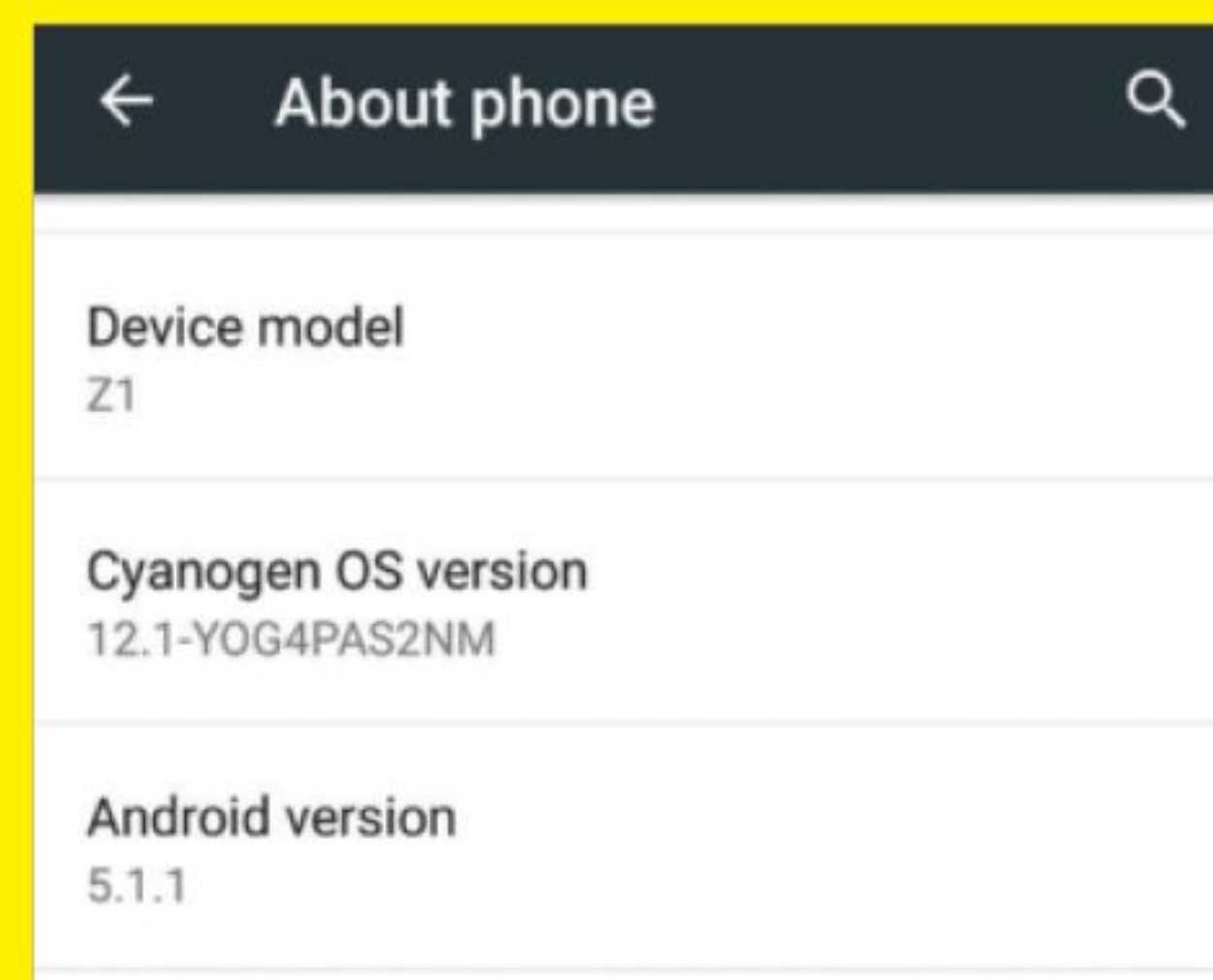
## 5 Perform the conversion

The conversion is straightforward. Select the sideload option in the recovery image and on your computer. From the directory in which you downloaded the update ZIP, type `/adb sideload z1.cyanogen.convert.signed.zip/`. The process can take up to five minutes.



## 3 Reboot to bootloader

First reboot to bootloader. From an ADB shell (after enabling USB debugging) type `/adb reboot bootloader/` followed by `/fastboot -i 0x2b4c oem device-info/`. If your device is locked, use `/fastboot -i 0x2b4c oem unlock/` (note that this will wipe your device).



## 6 Perform system update

After installing the conversion ZIP, select the reboot option from recovery to perform the first boot. The conversion ZIP installs a prerelease, watermarked version of Cyanogen OS. After completing the initial setup, use the system update option from the Settings menu.



Works with » Varies with device Difficulty » Easy

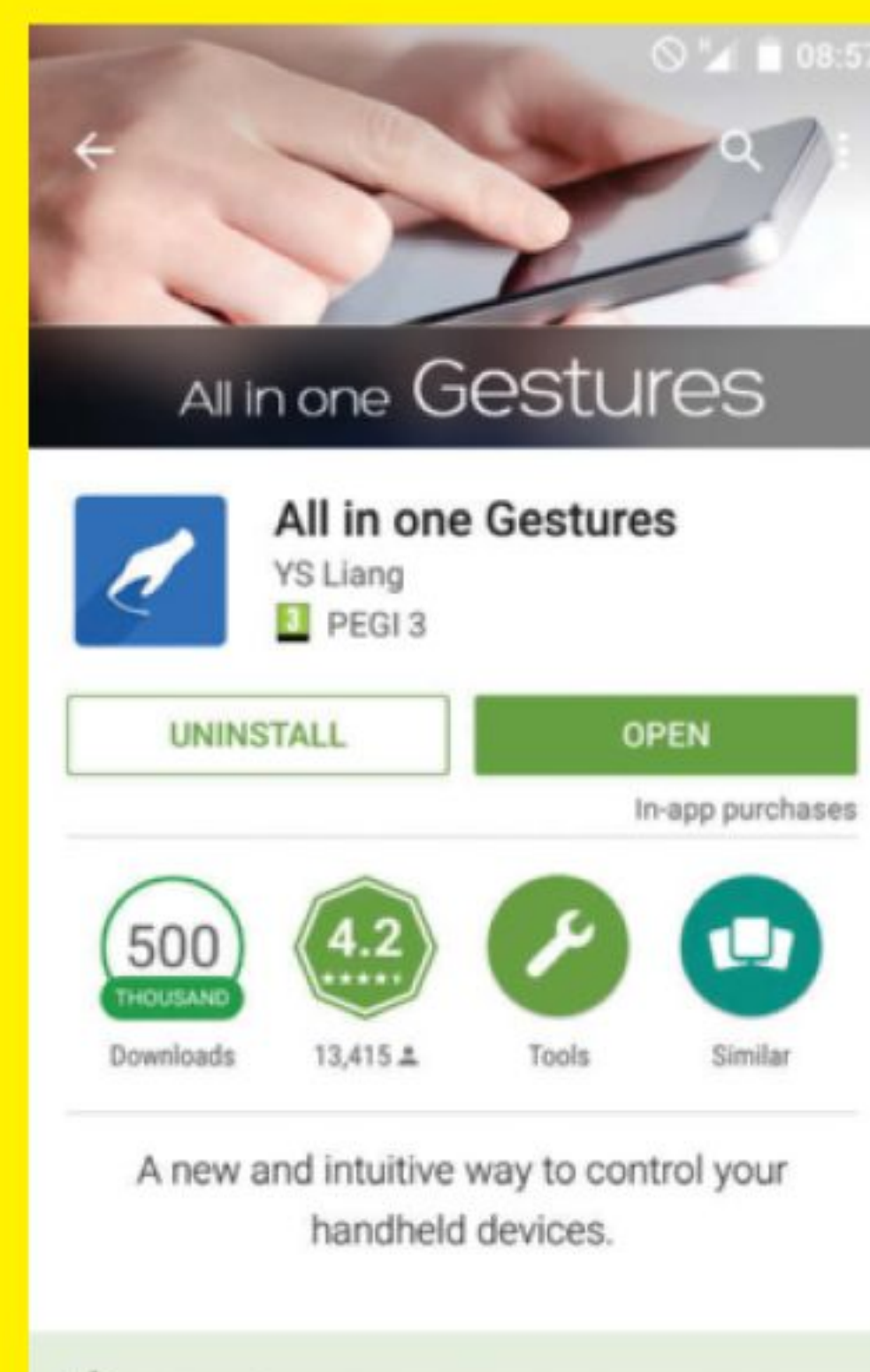
# Remap buttons with All in one Gestures

Remap your hardware buttons, corner gestures and much more on your Android device

While Google has long established a precedent for how hardware buttons on a device should optimally be laid out, some manufacturers continue to buck the trend. The biggest culprit of course is Samsung, who insists on continuing to have the back key on the right. A lot of Chinese manufacturers do this too, although many of them are even worse in that the left-hand key still remains a menu key despite the fact Google's guidelines disavowed this a long time ago.

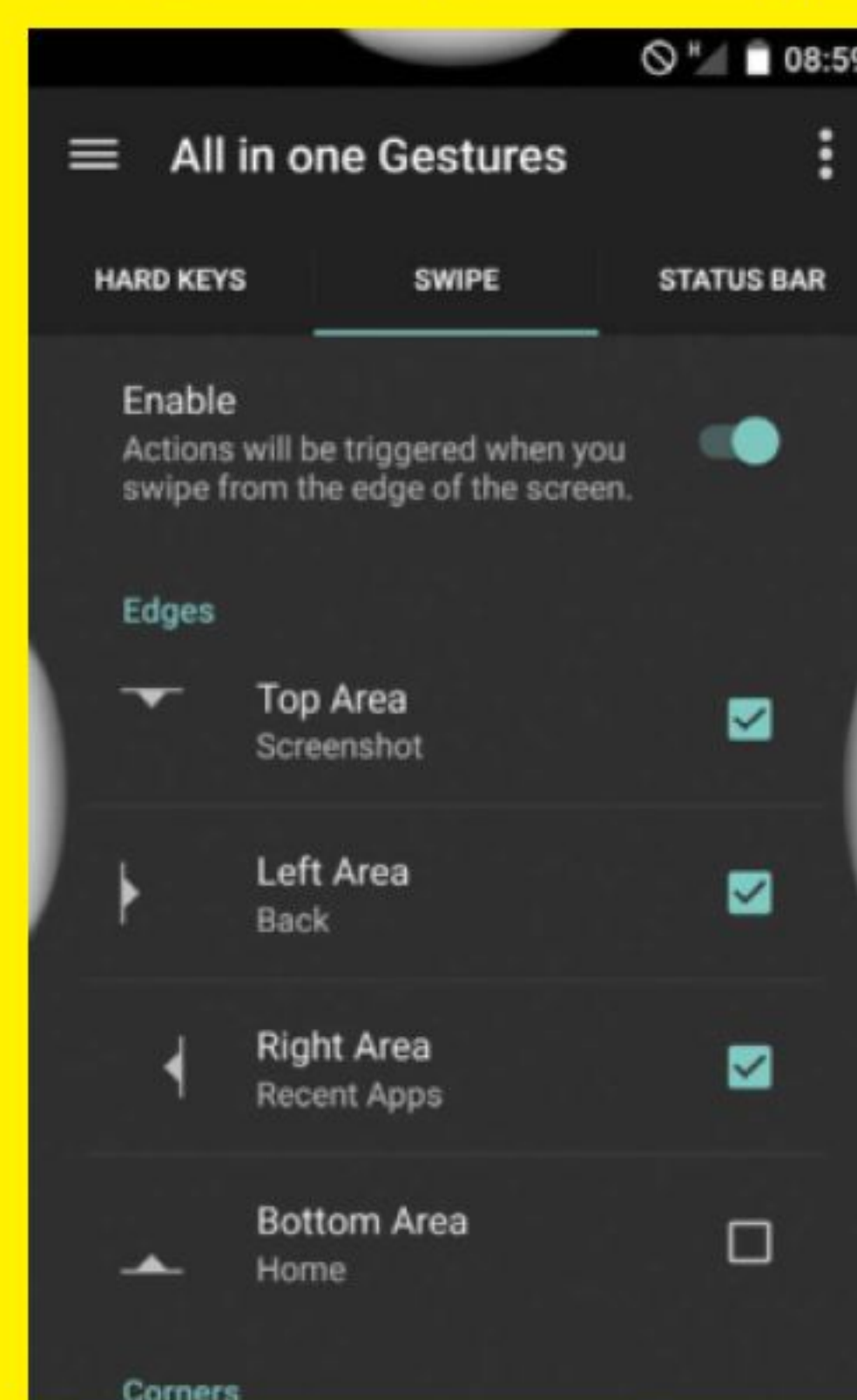
All in one Gestures gives you back control of your buttons, enabling you to assign them as you please. The application isn't limited to just changing how buttons behave on a single press. In addition, it's possible to configure long-press behaviour, effectively doubling the utility of every button. As another bonus, the volume keys and even the power key can also be remapped to enable additional functionality.

Double tap to wake is a very popular feature on devices now, however, double tap to sleep is very limited – normally implemented by a specific launcher and only available on the homescreen. All in one Gestures has you covered for this too with a configurable action for a double tap on the status bar that is perfect for turning off the screen (or indeed any other function from a comprehensive list). The same actions can also be assigned to edge or corner gestures.



## 1 Download and install the app

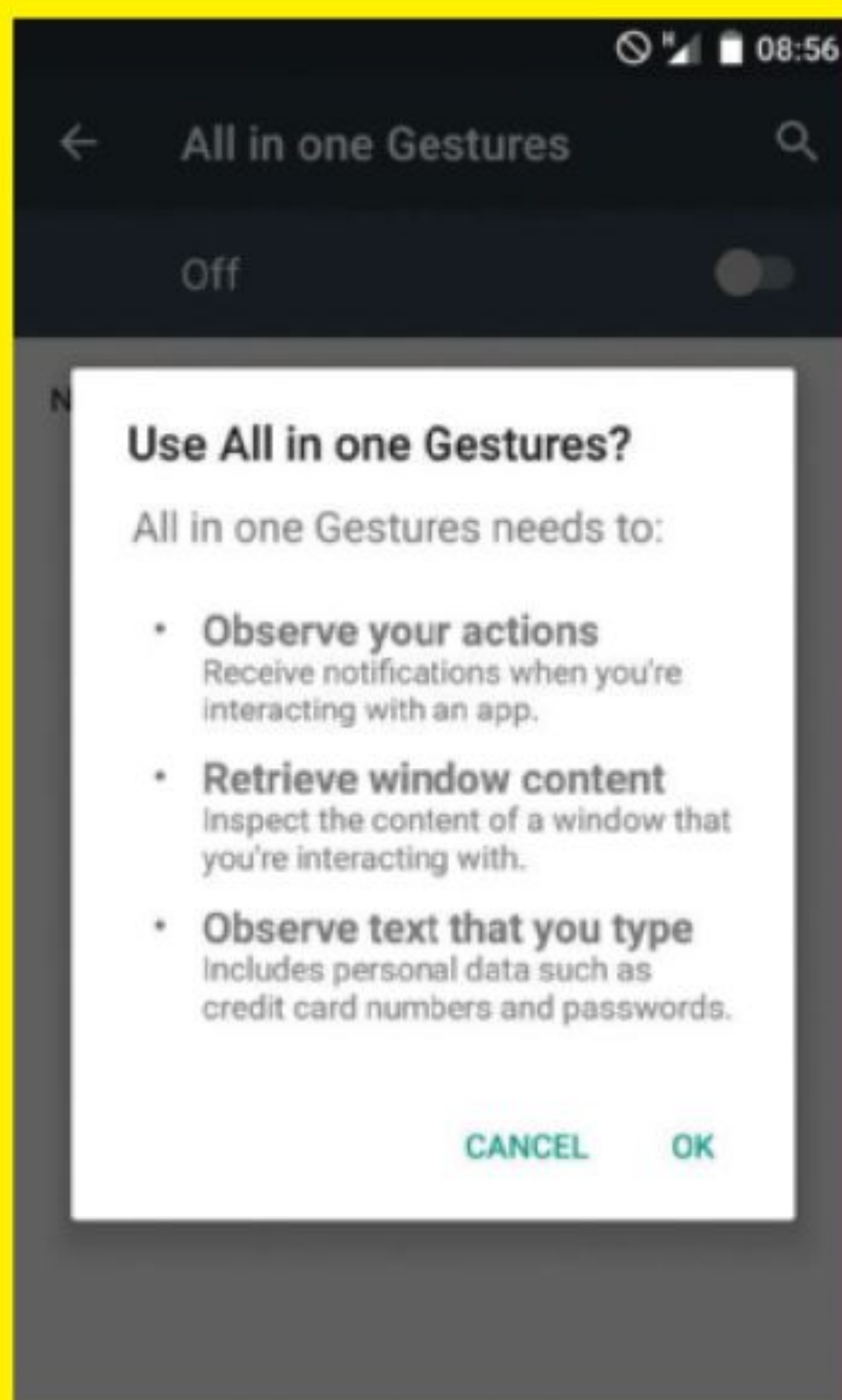
All in one Gestures is a free download from the Google Play store. Unusually for such a useful and powerful app, it doesn't require your device to be rooted in order for you to use it! There are no advertisements in the app – all the developer asks is you rate the app.



## 6 Edge gestures

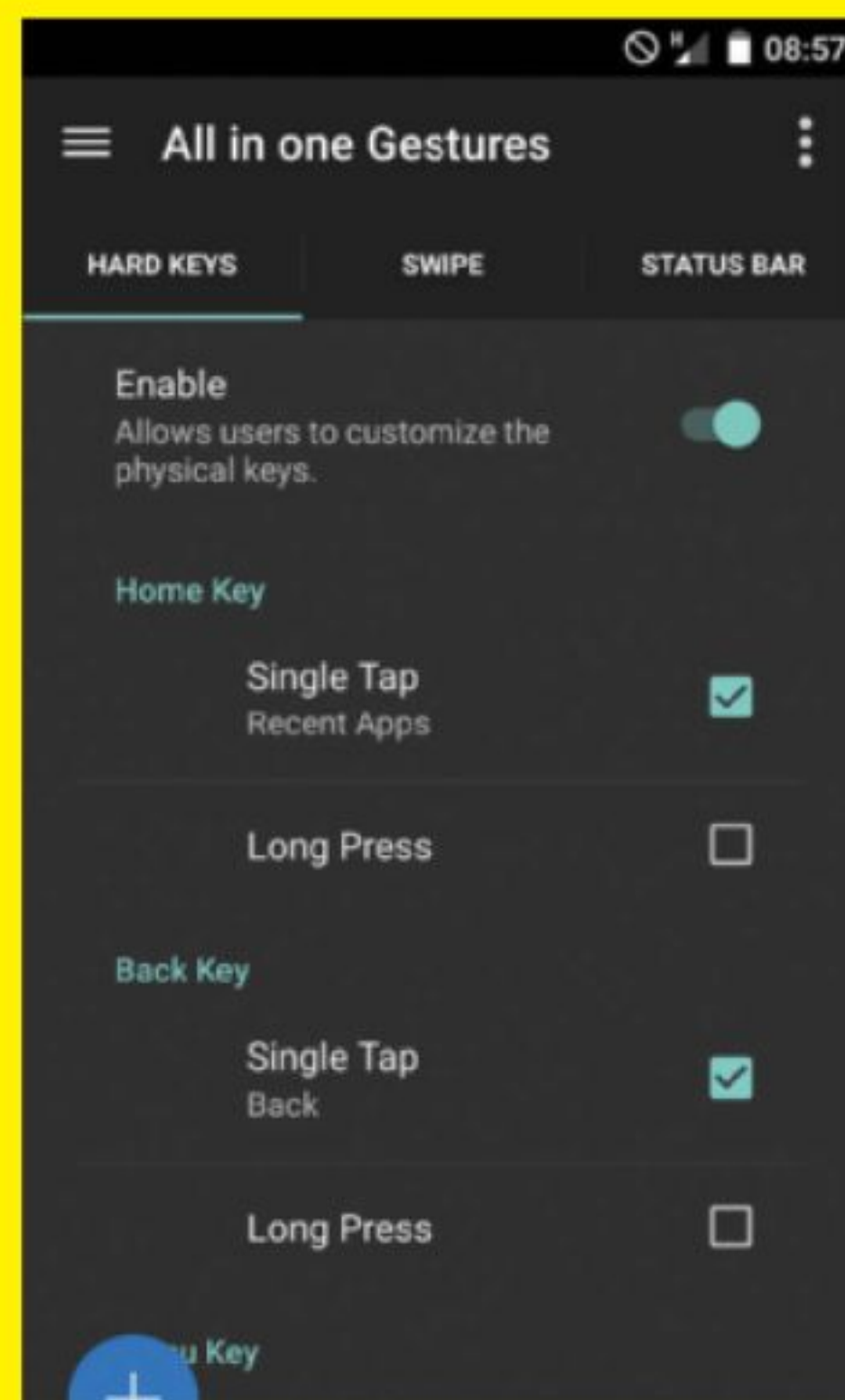
Sweeping from the top, left, right or bottom of the screen activates edge gestures – available in the Swipe section. Shading is displayed on the screen to indicate which of these areas are enabled. The feature works well, although the top edge zone can interfere with notification pull downs.





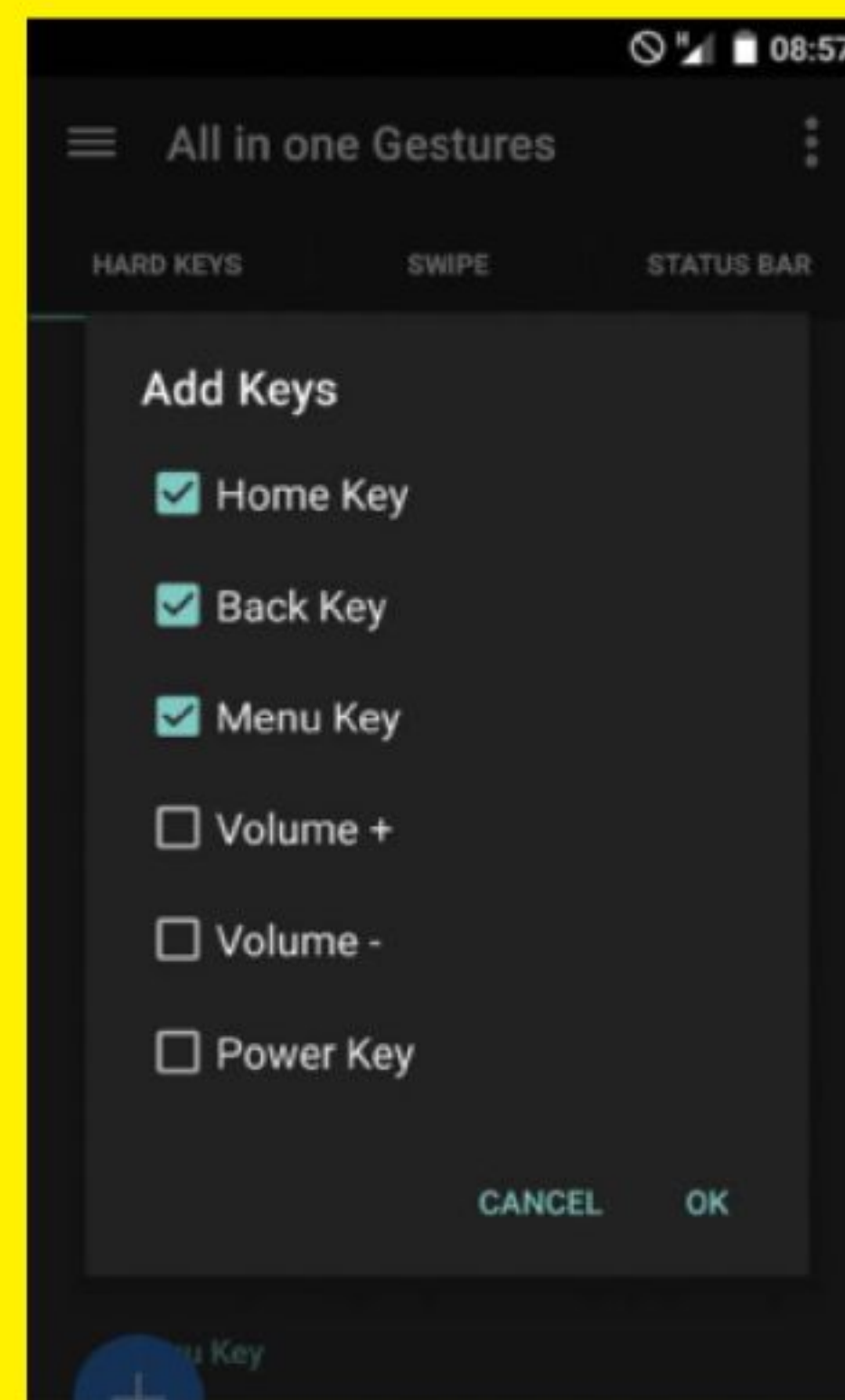
## 2 Activate accessibility

In order to intercept actions and gestures, instead of using root, All in one Gestures uses accessibility. The first time you enable one of the sections in the app, you will be prompted to click through to accessibility settings and then grant the app permission.



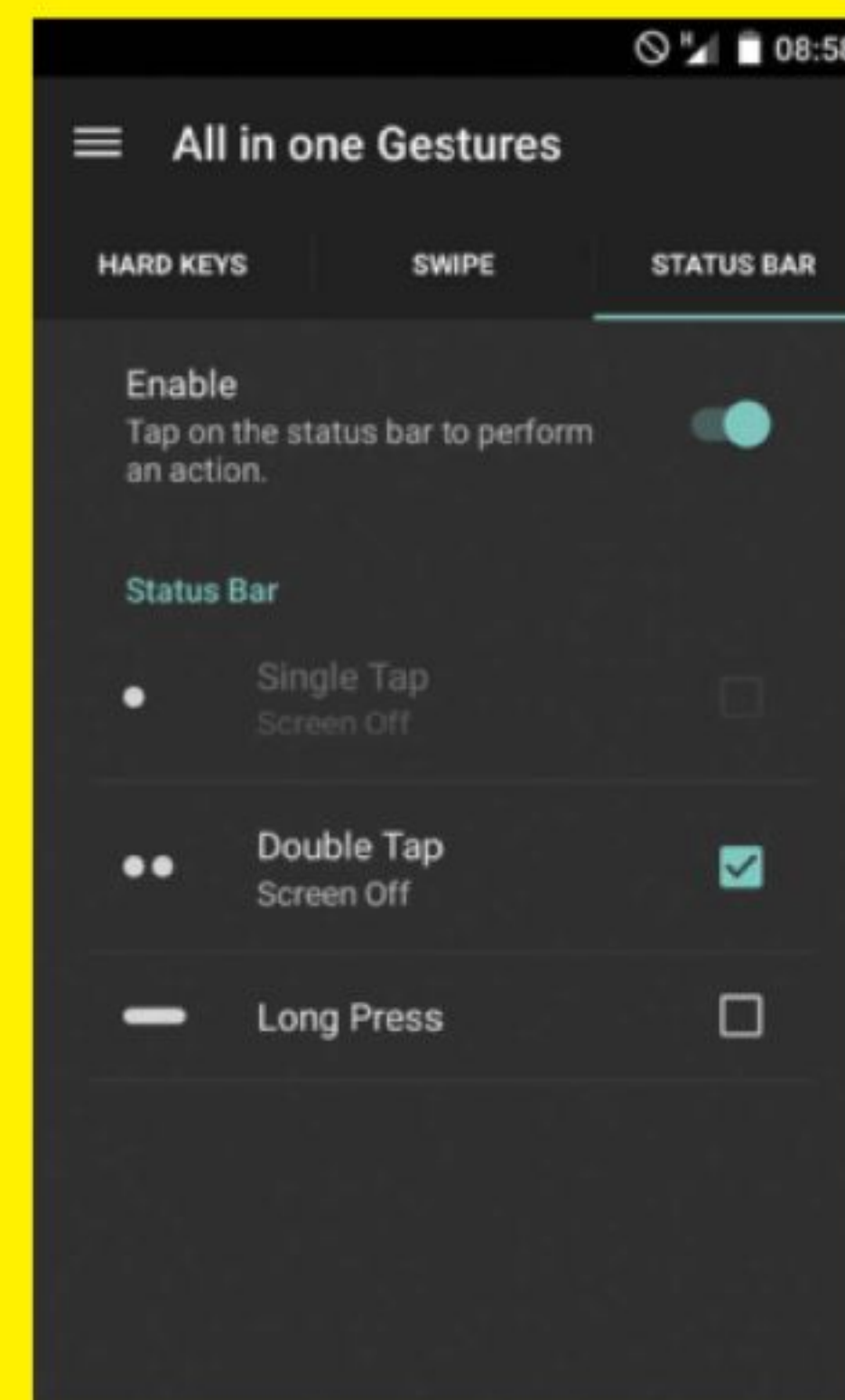
## 3 Remap hard keys

The first tab in the app is used to configure hardware key mappings. The home, back and menu keys on the phone are displayed by default and both single-tap and long-press functions can be remapped. Use this option if you want to swap the back and recent keys on a Samsung device.



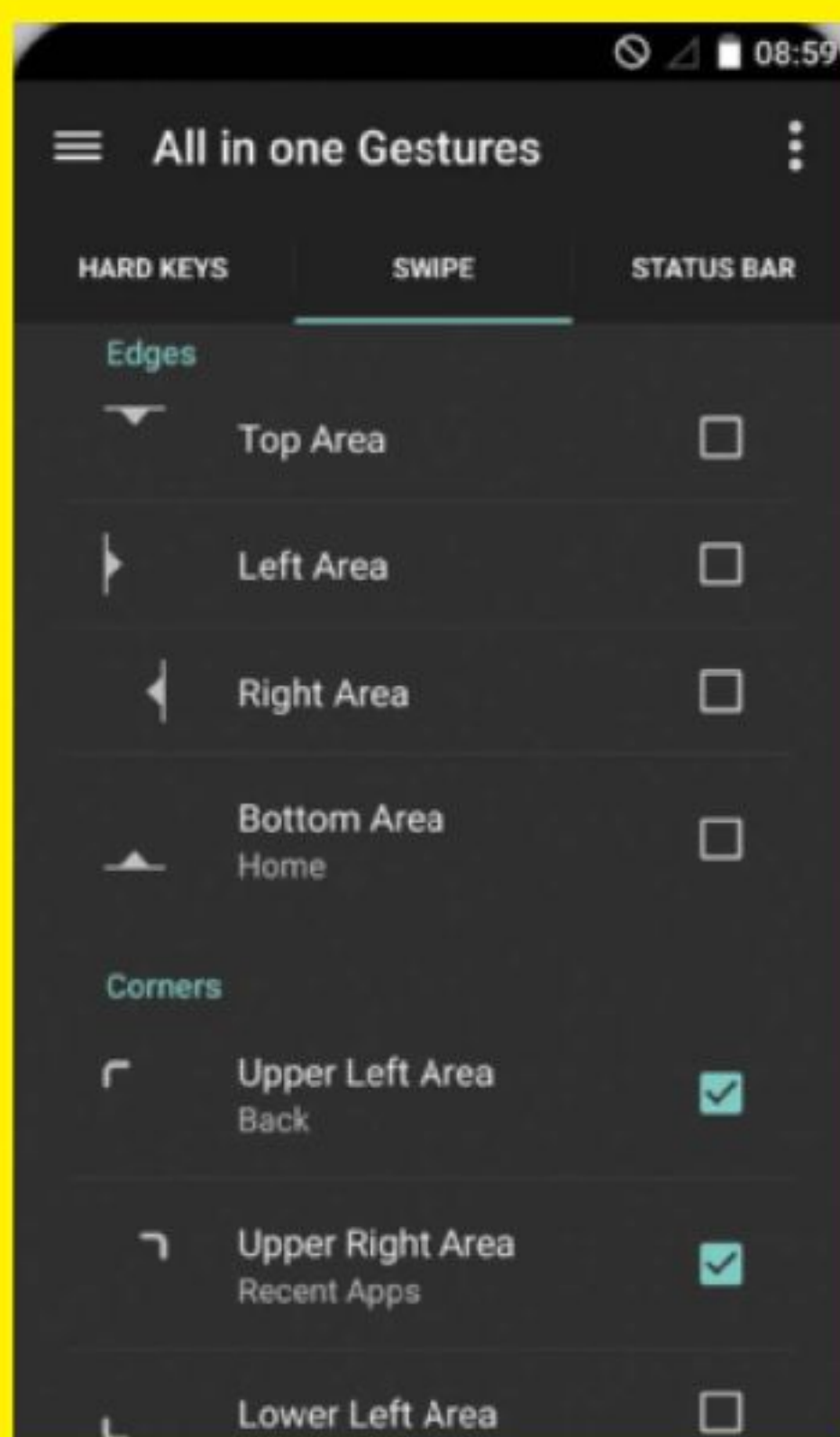
## 4 Add any additional keys

If the hardware key you wish to remap is not displayed in the list, you can either press the floating action bar to select from a predefined list or select Custom keys from the overflow menu, which will prompt you to press the key you wish to remap.



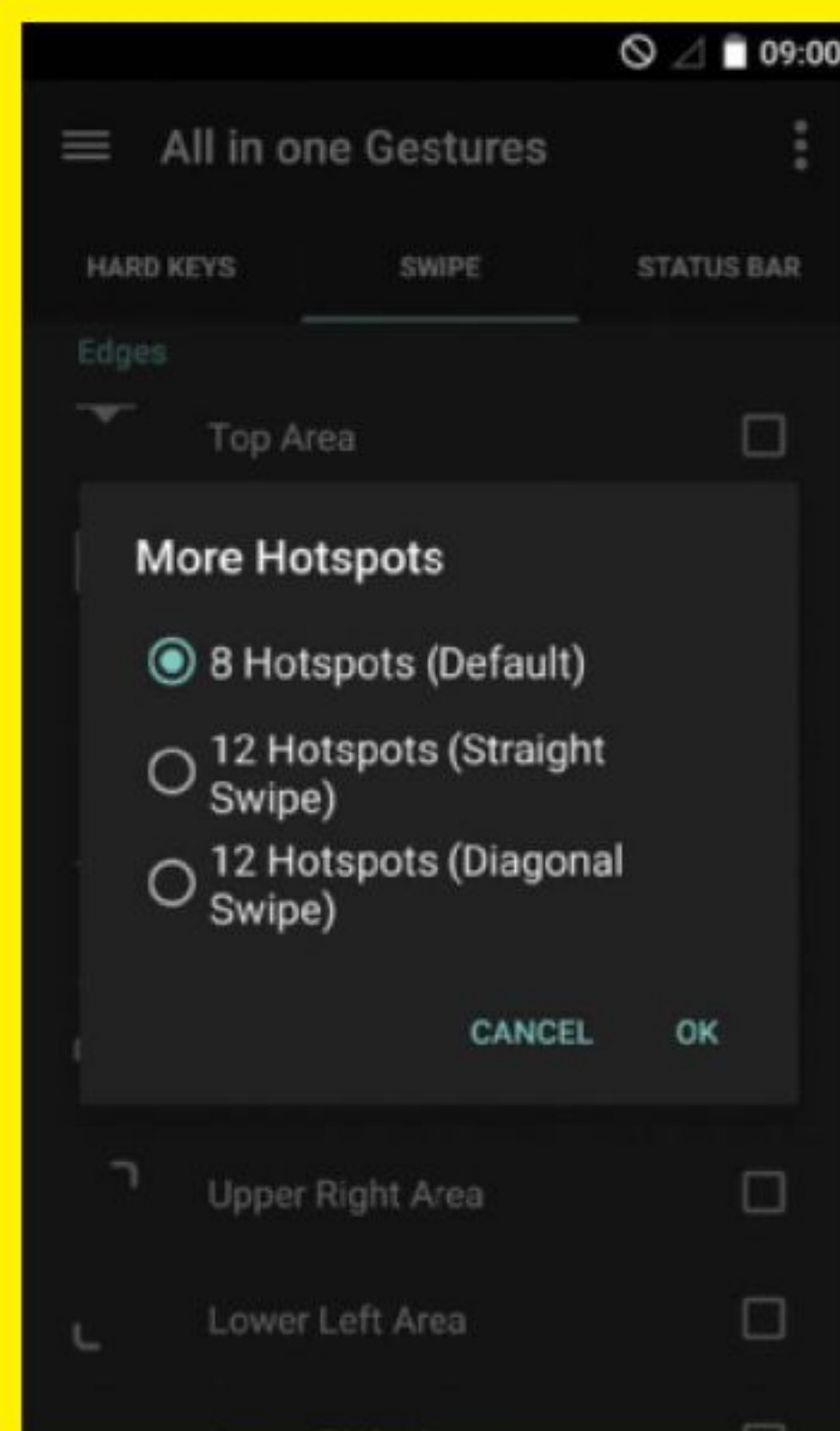
## 5 Status bar actions

All in one Gestures enables you to remap single tap, double tap and long press on the status bar to the same actions available for hard keys. The single tap function is less useful as it's easily activated by accident, but double tap is perfect for the screen off feature.



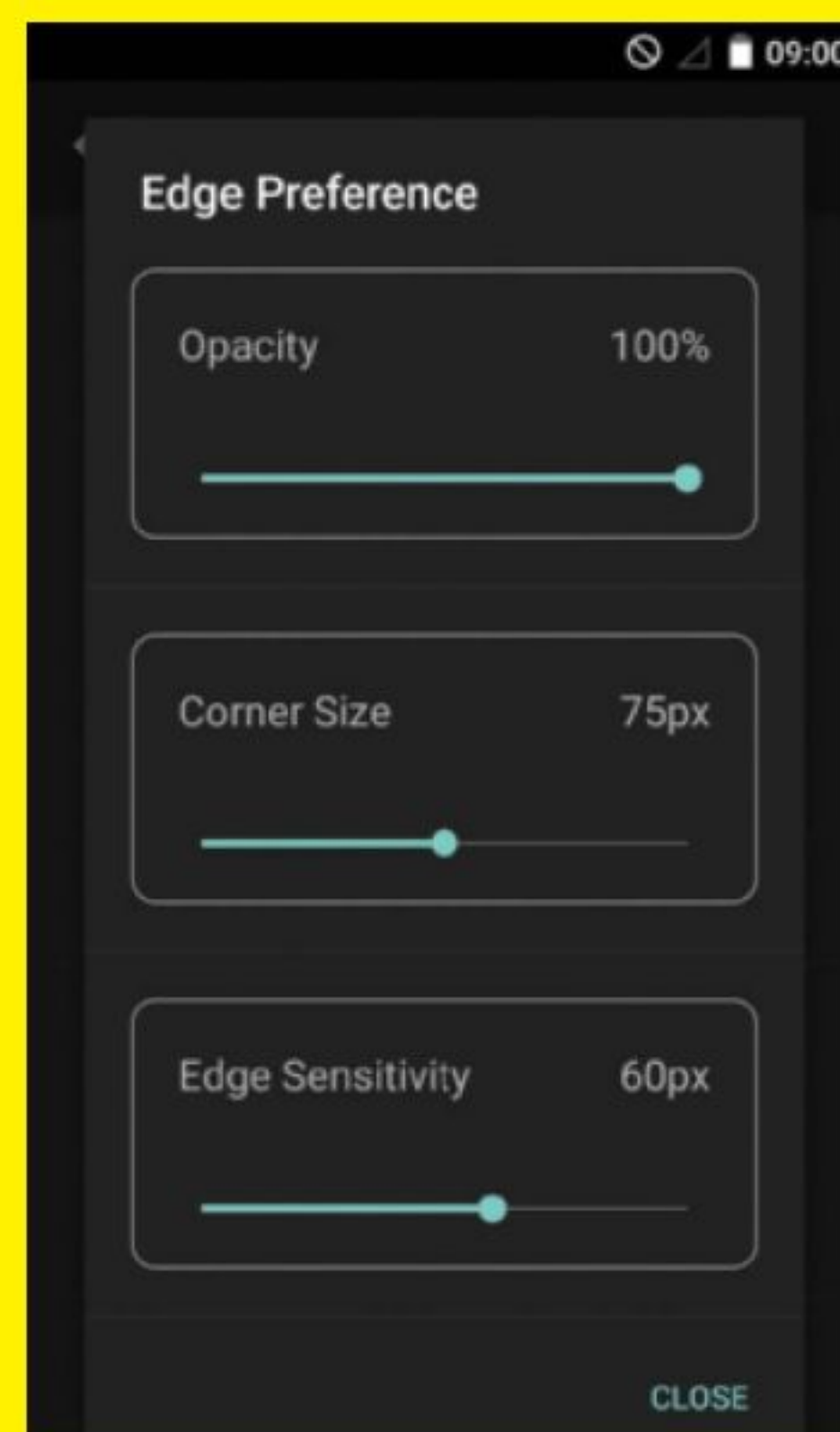
## 7 Corner gestures

Corner gestures work in the same way as edge swipes, but as the name suggests they are activated by swiping in from one of the screen's four corners. This not only makes the hotspot shading more subtle and less intrusive, but it also reduces any annoying instances of accidental activations.



## 8 Additional hotspots

A More Hotspots option is available in the overflow menu of the Swipe tab, which permits the default configuration of eight hotspots to be changed to twelve straight or diagonal. Replacing the corner swipe feature, both options provide three sweep zones per edge.



## 9 Edge preferences

In the app's personalisation menu in the slide-out drawer, the Edge Preference option lets the user configure opacity, corner size and sensitivity for the edge swipes. The opacity feature is particularly useful, enabling the zone shading to be made much less intrusive (or indeed just invisible).



## 10 Long-press

The Long Press Duration setting, also in the personalisation options, permits the user to configure the amount of time a zone must be pressed in order to trigger a long press. The value can be changed in steps of 100ms from 300ms to 1,500ms – this can reduce accidental activations.



## OnePlus X

This OnePlus isn't being touted as a flagship killer, but it does have killer looks. Is there some promise on the inside too?

The OnePlus X arrives without the usual rhetoric from the fast-growing Chinese manufacturer. Its purpose in life is not to depose devices that are at the very top end of the market and it's not backed by a ludicrous social media campaign. This time round it seems as though, while the infamous invite system is again being used, there is enough stock to actually give you a decent chance of owning the device. So what is the X and why is it here?

The X sticks to the classic OnePlus formula of offering better specs than you'd expect given the price, but this time the target is more mid-range. It's not a one-trick pony though, even more so than the price and the specifications, the X is all about design. Craftsmanship. Even, dare we say it, beauty.

On those measures, we have to say the phone delivers in spades. Strange as it may seem, as most manufacturers switch to 5.5 inches as the de facto screen size, it means that a 5-inch device like the OnePlus X feels compact in the hand. The front and back ooze quality, particularly with the 2.5D glass on the front and the aluminium, chamfered edges that have strips engraved in them right the way around – it really does look and feel top notch! The buttons and the alert slider move with a reassuring click and you certainly wouldn't have this down as anything less than a top price device. With the OnePlus X in one hand and the HTC One A9 in the other, the X certainly feels every bit as high end as the HTC, which comes in at more than twice the price.

Of course if a phone looks great and performs terribly, then all that design effort is in vain. Thankfully that's not the case with the OnePlus

### Active matrix AMOLED display

The OnePlus X uses an active matrix AMOLED display to provide vibrant colours and perfect blacks. The power-saving nature of AMOLED enables OnePlus to include an ambient display feature, activated by waving your hand over the device

### Ceramic option

The forthcoming ceramic X is created from Australian zirconia, ground into finely-milled sand, laid on an individual mould and laser-cut using the same techniques as cutting gemstones. This is baked at a temperature of 1,480 degrees Celsius for 28 hours multiple times and then rejected unless it's absolutely perfect

### A crafted product

OnePlus calls the X a crafted product with its brushed-anodised aluminium edges complete with chamfering, finely etched grooves, 2.5D Gorilla-glass front and matching glass back. And it's right, the phone is a cut above similar devices



X. Like the ZUK Z1 from another up-and-coming manufacturer, the X uses a Snapdragon 801 processor together with 3GB RAM and, in this case, 16GB storage (expandable via microSD). While this processor certainly isn't the latest and greatest, we have found that it outperforms the Snapdragon 615 and 617 that are used in most mid-range handsets. It may not be the most frugal when it comes to power consumption, but the device performance overall is impressively smooth.

Like the OnePlus 2, the OnePlus X runs Oxygen OS 2.1, a lightly massaged version of stock Android. At launch the ROM is based on Android 5.1 Lollipop, however, a Marshmallow update is expected to be released early next year. The changes that OnePlus has made in its iteration of Android are mostly beneficial, we are particularly fond of the black theme (which can be disabled) as it's perfect for making the most of the AMOLED screen.

Aside from the last generation processor, there are inevitably a few areas of the OnePlus X that are a compromise. The capacitive buttons below the screen are not backlit (although in OxygenOS they can be disabled altogether in favour of Nexus-style on-screen buttons), the bottom-mounted speaker is only average and there is no support for 4K video recording. That aside, imaging and video on the X is good. The 13MP primary camera isn't going to trouble a Nexus 5X, 6P, Galaxy S6 or LG G4, but focusing is fast, the HDR and clear image modes are useful (although we'd have liked to see auto HDR), and the camera app itself includes modes such as time lapse and slow motion. There's no support for the Camera2

API, which means no RAW or manual shooting, although lack of support is surprisingly common, even amongst higher end handsets.

The OnePlus X impresses in the same way that the original OnePlus One did. Even without taking its price into account, there's a whole lot to like and when you take into account that you can pick it up for under £200, the phone deserves to be a smash hit. ■

#### Camera prowess

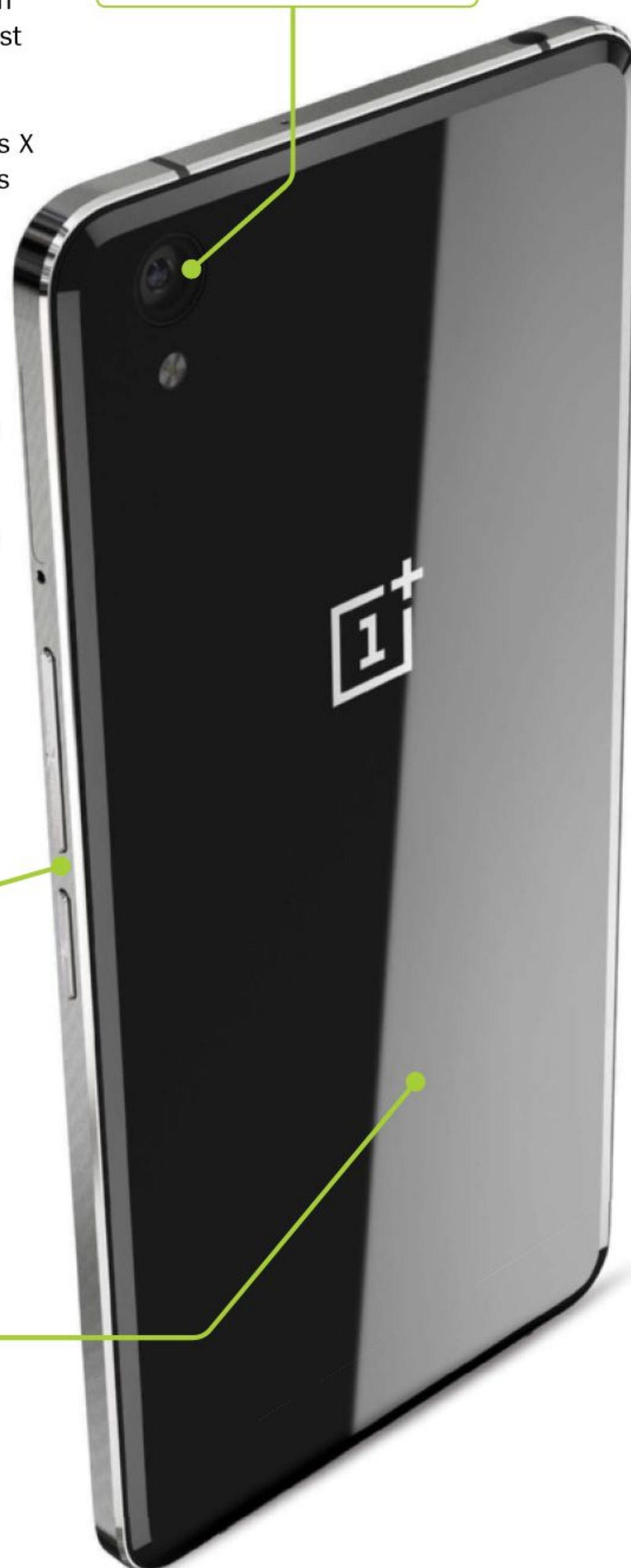
The OnePlus X has a 13MP main camera with phase detection auto-focus and an 8MP front-facing camera, complete with beauty shot. ISOCELL technology is used on the main camera for optimum low-light performance, together with HDR and Clear Image modes

#### Alert slider

Like its larger sibling, the OnePlus X features an alert slider that switches between the device's three modes – all notifications, priority only and none. It has a mesh cut for a quality feel and is a useful addition to the device

#### Textured cases

The OnePlus X, with its glass back, does have a tendency to slide off surfaces. Although the back is not removable, OnePlus offers cases in a range of textures including Bamboo, Rosewood, Black Apricot, Karbon and – of course – OnePlus' signature texture, Sandstone



## OnePlus X

£199/\$249 Onyx Black  
£269/\$TBC Ceramic

» More information [oneplus.net/uk/x](http://oneplus.net/uk/x)  
» Supplied by **OnePlus Retail**



### Technical specs

» Operating system.....	OxygenOS based on Android 5.1
» Processor .....	Qualcomm Snapdragon 801 2.3GHz quad-core
» Memory.....	16GB storage / 3GB RAM
» Dimensions.....	140 x 69 x 6.9 mm
» Weight.....	Onyx 138g, Ceramic 160g
» Display size .....	5-inches
» Display resolution.....	1920 x 1080 (441 ppi)
» Front camera.....	8MP
» Rear camera.....	13MP
» Connectivity .....	LTE, Wi-Fi, Bluetooth 4.0
» Expansion slot.....	microSD up to 128GB

### Battery life

A 2,525mAh battery and a powerful processor make for an average battery life, though it will outlast the HTC One A9

### Good for

#### Hand-friendly size

With few options in the 5-inch and under market, the OnePlus X makes a stand for smaller devices.

#### Fantastic blacks

The AMOLED screen in the OnePlus X is very impressive. The dark theme really shows it off too

### Bad for

#### Android Pay

There's no NFC in the OnePlus X, which means no future compatibility with Android Pay

#### Choice: dual SIM or microSD

The OnePlus X follows a common trend where you can have a second SIM or a microSD slot

### Verdict

The OnePlus X is a beautiful piece of hardware with very good specs and a great price





## Sony Xperia Z5 Premium

Is the world's first Android device with a 4K screen worth the premium price tag?

Here we have it ladies and gentlemen... the world's first Android phone with a UHD screen. And who'd have thought it? It's from Sony, who hasn't exactly been a trail blazer with its devices of late, with a seemingly stagnant design language, barely incremented specs and ultra-frequent releases. Perhaps it's fitting given Sony's pedigree in television that it is the first to bring this technology to the smartphone market, but the big question is whether having such a high-resolution screen in a 5.5-inch panel (when the same resolution is used on 55-inch screens) makes any real world of difference at all. Read on to find out.

Sitting atop the Z5 range, you'd expect the Premium to command a premium price – and it does. Coming in at £629.99, the phone is only out-priced by the 128GB Galaxy S6 edge +, despite the fact that the Sony includes just 32GB of on-board (expandable) storage. Aside from the rather meagre capacity and a lack of Qi charging yet again, the Z5 Premium does tick all the right boxes on the spec sheet. A Snapdragon 810 processor, 3GB RAM, Cat 6 LTE with Bluetooth 4.1, NFC and MIMO Wi-Fi, great cameras, a big battery and Sony's ubiquitous waterproofing – it's all there.

If you're splashing out such a large pile of cash for a flagship, you expect it to not only have all the right bits on the inside, you expect it to look good on the outside too. Sony's OmniBalance design is tried and tested (and arguably tired), but it's now well honed. The black Z5 Premium is perhaps too understated, but the chrome or gold models really attract attention, almost as much as they do mucky fingerprints! Keep a cleaning cloth in your pocket if you're the slightly obsessive type.

The Z5 Premium ships with Android 5.1.1 Lollipop and Sony's subtle software customisations. While the changes are already relatively light, the forthcoming Marshmallow build is set to take things a step further, with even more of the base Android OS shining through – something we applaud now that Android really is both mature and beautiful to look at. Interestingly, many of Sony's unique

### The biggest Z5

At 5.5 inches, the Z5 Premium neatly completes the Z5 line-up, sitting above the 4.6-inch Z5 Compact and 5.2-inch Z5. It is the tallest and widest of the family, however, it comes in at more than a millimetre thinner than the Compact version

### Photo upscaling

The Z5 Premium upscales your photos and videos if required to make them look better than ever on the 4K screen. Currently few services provide true 4K content and file sizes are huge, so this is a necessity for the device

### VR potential

Regardless of whether in excess of 800ppi is useful in everyday use, there is one application where it may well become invaluable in the future – for Virtual Reality, where the phone will be right in front of your eyes

### MicroSD expansion

The Z5 Premium comes with 32GB on-board storage, the minimum we'd expect for such a premium flagship. Storage is expandable via microSD up to an additional 200GB, particularly useful with the adoption feature included in the forthcoming Marshmallow update





# Sony Xperia Z5 Premium

£629.99/\$779.99

» More information [sonymobile.com](http://sonymobile.com)

» Supplied by **Clove Technology**

## Best deal



£36.00  
per month  
(contract)  
£99.99 up front



£41.29  
per month  
(contract)  
£40 up front



£54.99  
per month  
(contract)  
£29.99 up front

## Technical specs

» Operating system.....	Android 5.1.1 Lollipop
» Processor.....	Qualcomm Snapdragon 810 2GHz octa-core
» Memory.....	32GB storage / 3GB RAM
» Dimensions.....	154.4 x 75.8 x 7.8 mm
» Weight.....	180g
» Display size.....	5.5-inches
» Display resolution.....	4K UHD 2160 x 3840 pixels (806 ppi)
» Front camera.....	5MP
» Rear camera.....	23MP
» Connectivity.....	LTE Cat 6, Bluetooth 4.1, Wi-Fi MIMO, NFC
» Expansion slot.....	microSD up to 200GB

## Battery life

The screen takes its toll on the 3,430mAh battery and the longevity lags behind similarly specified devices

## Good for

### Dunking in the pool

The Z5 range remains fully waterproof and dust tight, with an impressive IP68 rating

### Film lovers

The Z5 Premium is great for films thanks to both its screen and its excellent stereo speakers

## Bad for

### Putting in your pocket

The Z5 Premium is taller than the Note 5 that has a 5.7-inch screen. Big pockets are needed!

### Always in 4K

The Z5 Premium runs in 1080P mode most of the time, using 4K only for photo or video content when needed

## Verdict

The Z5 Premium is a very good phone, but it's just too expensive and the 4K screen adds little value



battery optimisations have found their way into the base OS, so it remains to be seen how much difference the Stamina mode will make on Android 6.0.

There's no question about it, the screen on the Z5 Premium is great. It's super sharp and very bright with excellent colour reproduction and impressive outdoor visibility, but there is a problem. We loaded some (huge) 4K content and while it looked great, we had a hard time discerning any difference between the display on the Z5 Premium and its QHD (or even 1080P) competitors. Just to check it wasn't a problem with our eyes, we ran a blind test in the office and the result was the same – the Z5 Premium screen, while fantastic, just doesn't provide a noticeable step up in quality given the huge number of additional pixels.

Of course, this causes a bit of an issue. If you're paying a premium in order to get an

upgraded screen, but it provides little tangible benefit, where does that leave the device? It really has to be very, very good in order to justify the cost and in fairness, the Z5 Premium largely delivers. The camera is excellent if a little lethargic (although this is assisted by an updated Sony camera app that is rolling out), performance is smooth (helped by the fact that most of the time the device runs in 1080P mode), build quality is great and we're fans of the front-facing stereo speakers. If you buy the Z5 Premium, it's unlikely you'll be disappointed.

Perhaps the biggest issue is that the phone's sibling, the 5.2-inch Z5, is more manageable, has virtually the same specs, is less fingerprint prone and considerably cheaper.

Sony's headline feature in the Z5 Premium is barely a feature at all and while we commend Sony for its innovation, it's a disappointment. ■

### 4K recording

As well as the ability to display 4K content, the Z5 Premium can also record 4K content courtesy of its 23MP Exmor RS camera. The high-resolution sensor has a 5x Clear Image zoom with minimal loss of quality

### Go for gold

The Z5 Premium is available in three colours – chrome, black and gold. If you buy the black, expect it to be very subtle. If you go for gold, then the glass back of the device is effectively a mirror!



## Design matters

The metal build of the Mate S adds a premium finish to the device, while also keeping the weight down. At just 156g, you may forget that you're carrying it at times

## Dual SIM or storage?

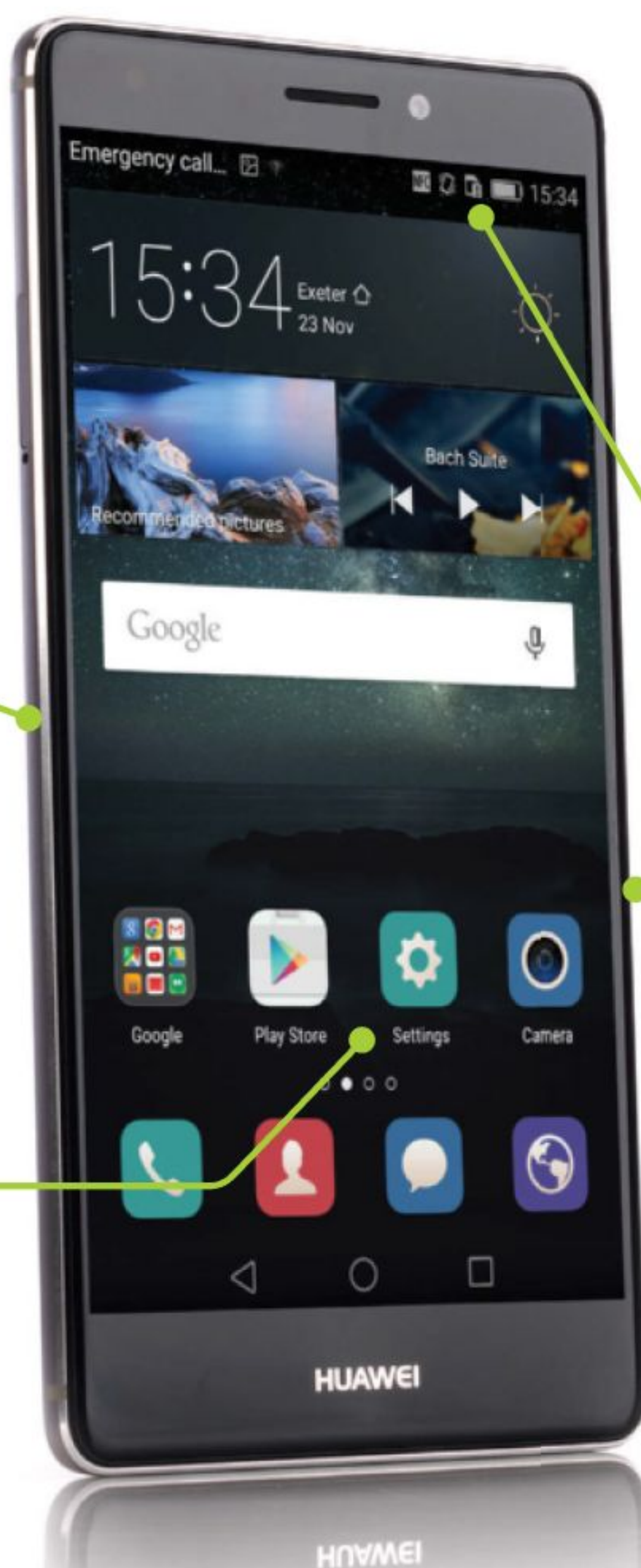
While the ability to switch between two SIM cards is nice, it's even better when one of them can be used as a slot for a microSD card. Expandable storage has been made much easier here

## Coming of age

Emotion 3.1 is without doubt the best version of Huawei's custom OS that we have ever had the chance to play with. It makes a welcome partner to Android 5.1 Lollipop

## Get scanned

Despite the awkward placement beneath the camera sensor, the fingerprint scanner is very useful, especially when it comes to locking and unlocking the device



# Huawei Mate S

Meet Huawei's best-ever smartphone: a combination of beautiful design and excellent usability

One of the trends we find when we review a device from Huawei is that we love the design, but feel a little let down by the custom UI, **Emotion**. At first we were worried that the trend would continue when we saw the gorgeous Mate S. It borrows elements from the likes of the Samsung Galaxy Alpha and HTC M9 to provide a near full-metal build with an almost bezel-less fascia, which sports a stunning 5.5-inch display.

As well as the normal ports, users will find dual-speakers on the bottom that offer fantastic quality for music and movies, while a second SIM slot doubles up as an expandable microSD slot. Sitting around the back is a fingerprint scanner, a handy way to lock and unlock your phone in a flash, but we ended up hovering our finger on the camera sensor on more than one occasion, as it's nearly the exact same size.

Turning on the device reveals a forked version of Lollipop 5.1 running alongside Emotion 3.1, and it's an absolute treat. Both work well in sync to provide one of the most complete Android user experiences we've ever seen and there are some nice touches to enhance it even further. For example, pulling down on the display will

show your schedule for the day, while the app management screen will highlight how much RAM you're using at that exact time.

It makes mincemeat of all the tasks you could possibly throw at it and while the HiSilicon Kirin chip lacks the finesse of the Snapdragon series, the octa-core configuration makes the Mate S a joy. Moving between menus is flawless, animations are plentiful and work seamlessly, and the added 3GB RAM handles very intensive games. However, it does put the 2,700mAh battery under a lot of pressure, with our tests showing you can expect close to a day of usage doing just everyday tasks and with medium use.

Keen photographers can rest easy that the Mate S will deliver high-quality images, as the 13MP rear sensor has a plethora of settings. It isn't the best for low-light photography, but a few tweaks can make the photos acceptable. To say Huawei has hit the nail on the head with the Mate S wouldn't be doing it justice. While its design lends itself to a select few competitors, it's the improvements to the Emotion UI that make this a winner. Believe us when we say this is a device we can wholeheartedly recommend. ■

## Huawei Mate S

£469/\$TBA

» More information [consumer.huawei.com](http://consumer.huawei.com)  
» Supplied by Huawei

## Best deal



£31  
per month  
(contract)



£32  
per month  
(contract)



£32.49  
per month  
(contract)

## Technical specs

- » Operating system..... Android 5.1.1 Lollipop
- » Processor..... HiSilicon Kirin 935 2.2GHz octa-core
- » Memory..... 32/64/128GB storage / 3GB RAM
- » Dimensions..... 149.8 x 75.3 x 7.2 mm
- » Weight..... 156g
- » Display size..... 5.5-inch
- » Display resolution..... 1080 x 1920 pixels (401 ppi)
- » Front camera..... 8MP
- » Rear camera..... 13MP
- » Networks..... 3G, 4G, Bluetooth 4, NFC
- » Expansion slot..... microSD to 128GB

## Battery life



You'll get close to a full day with the 2,700mAh, depending on how you use it

## Good for

### The little things

The added bonus of a fingerprint scanner and UI tweaks are fantastic to use

### Being big and beautiful

The screen size is great with colours that look vivid and bold across the whole 5.5-inch display

## Bad for

### Low-light photography

Huawei's included sensor is a little weak when dealing with low-light images

### Being borrowed from the best

There are some eerily similar design features here that we've seen used elsewhere before

## Verdict

Stunning in every sense of the word. Huawei's best-ever device could be your next droid





# Vodafone Smart speed 6

## £50/\$N/A

» More information [vodafone.co.uk](http://vodafone.co.uk)  
» Supplied by **Vodafone**

### Best deal



This is a Vodafone exclusive smartphone, so after a £50 upfront cost you can choose a Vodafone SIM for £10, £15, £20 or £30 per month

### Technical specs

- » Operating system..... **Android Lollipop 5.1**
- » Processor..... **Mediatek 1.1GHz quad core**
- » Memory..... **8GB storage / 1GB RAM**
- » Dimensions..... **132 x 65 x 10 mm**
- » Weight..... **146g**
- » Display size..... **4.5-inches**
- » Display resolution..... **480 x 854 pixels (218 ppi)**
- » Front camera..... **2MP**
- » Rear camera..... **5MP**
- » Networks..... **4G, Bluetooth 4.0**
- » Expansion slot..... **microSD (up to 32GB)**

### Battery life

A slightly larger capacity than this average 1,750mAh battery would have given this phone an extra edge

### Good for

#### Value for money

At just £50 this phone is an absolute bargain considering what else is out there

#### Speed

RAM speed is one of its headline features and it doesn't disappoint when navigating the web

### Bad for

#### Cameras

The camera quality is low and they produce grainy images with odd colours in imperfect light

#### Design

Both the front and back of the phone simply do not look attractive in the slightest

### Verdict

If it looked just a little bit nicer this would have scored higher because internally it is an excellent handset



#### Screen shortage

The screen might just run 218ppi, but it's nice and bright, even if the colour gamut is limited. The viewing angles are really quite poor too, but when viewed straight on this is a good-quality screen

#### Power and volume

The buttons on the right-hand side are embedded tightly into the phone, which does make it a little tricky to realise exactly which button you are pressing. A varied texture or a difference in shape on the two buttons would have helped here

#### Extra storage

The very limited 8GB storage can be beefed up to 32GB with a microSD card. Luckily the Vodafone apps that come pre-installed on the phone can be deleted if you don't want to use them

#### Grey day

You can either have the Smart speed 6 in silver or anthracite, which is essentially a fancy way of saying a fairly dark grey colour. The anthracite looks a little bit more attractive than the silver

# Vodafone Smart speed 6

## Could the latest Vodafone mobile sell as rapidly as its name suggests?

Vodafone isn't good at naming its phones. We've had the clunkily named Smart Prime 6, Smart ultra 6, Smart 4 power and now the Smart speed 6. Even though these aren't the longest names in the Android world (the Samsung Galaxy S II Epic 4G Touch springs to mind) they don't exactly sound like the kind of phones you particularly want to own. However, we were incredibly impressed with the Smart Prime 6, so hopefully the baby of the Smart range can keep up this good form.

At just £50 we had to make sure we kept our expectations low, which was lucky when we took it out of the box because this really is an ugly phone. The huge, almost cartoon-like buttons on the lower bezel look horrible and the thick boxy shape is reminiscent of those slider phones from the early part of the century. Nevertheless, the chrome-effect plastic on the back isn't too horrid, and the 4.5-inch screen can be comfortably navigated with one hand.

The Smart speed 6 earned its meteoric moniker because of its 4G capability, which is a pretty impressive addition for a phone that costs the same as some Samsung Galaxy S6 cases. It

also lives up to those promises in benchmarking tests where it outscores big-name rivals like the LG G4c. Its most impressive stat was its RAM speed and when we were testing it, we did notice it was surprisingly nippy. Web browsing and gaming came very easily, despite the 1.1GHz Mediatek quad-core processor and 1GB RAM. Vodafone has successfully produced a lot of power from these components so you won't be left hanging about when using the Smart speed 6. If you're not too worried about specifications yet still want a phone that gets the business done at a pace, this might well be worth a look.

The cameras are far from impressive (5MP and 2MP), but they do a decent job as long as you don't expect anything amazing. The colours are all over the place, selfies are blurry and you can forget about taking snaps in low light, although the flash does save the rear-facing pictures a bit.

The battery ought to last you a shade over a day and this is a bit of a shame.

When the price is taken into consideration, Vodafone has done pretty well, but even so, we're not quite sure that we would want to own the Smart speed 6. ■



## Back to bezels

With most tablets cutting off any excess waste, Amazon has packed some big bezels on to each side of the Amazon Fire. Unfortunately, it makes the tablet look really cheap

## Playing with Fire OS

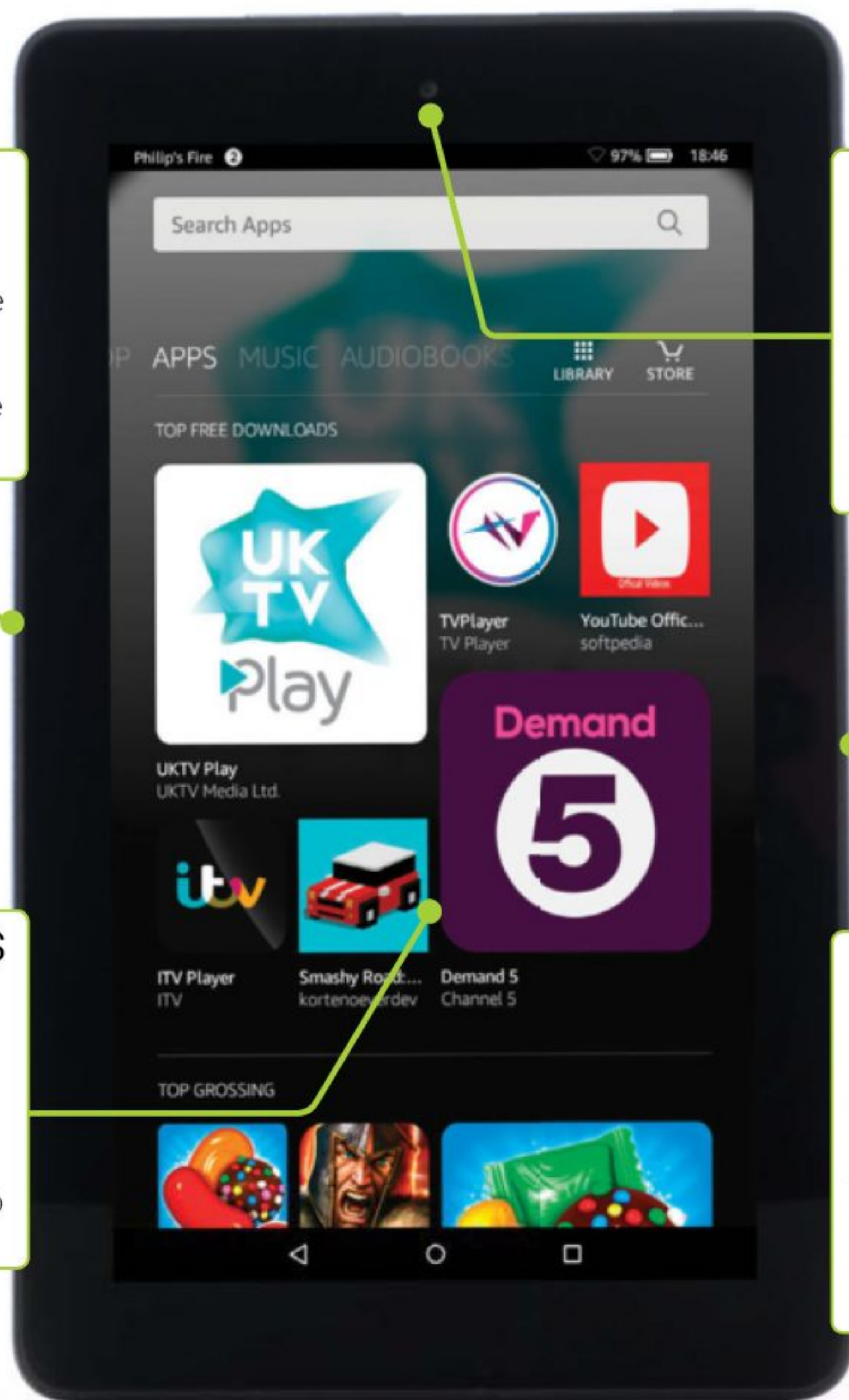
While Fire OS has some noticeable tidbits of Android dotted about, it's heavily tailored to those involved with Amazon's media products. It's best enjoyed if you subscribe to Amazon Prime

## Don't say cheese

Neither camera on the Amazon Fire is really worth using and don't even think about trying to snap a shot in low-light conditions. However, if you're looking to stick with video chats then these will do just fine

## Store your media

Only 8GB internal storage is included with the Amazon Fire, but thankfully users will be able to use a microSD card to help expand it. This is especially useful if you have a number of films downloaded to your tablet



## Amazon Fire

£49.99/\$49.99

» More information [amazon.co.uk](http://amazon.co.uk)  
» Supplied by Amazon



## Technical specs

- » Operating system..... Fire OS 5
- » Processor ..... MediaTek 1.3GHz quad-core
- » Memory..... 8GB storage / 1GB RAM
- » Dimensions..... 191 x 115 x 10.6 mm
- » Weight..... 313g
- » Display size ..... 7-inches
- » Display resolution..... 600 x 1024 pixels (171 ppi)
- » Front camera..... VGA
- » Rear camera..... 2 MP
- » Networks..... Bluetooth, Wi-Fi
- » Expansion slot..... microSD to 128GB

## Battery life

The promised seven-hour battery life was highly accurate during our tests

## Good for

### Pick-up and play

Its low cost makes it ideal for an entry-level device for a child or Android newbie

### Enjoying Amazon content

You'll find the whole of Amazon's media empire ready and waiting for you to try out

## Bad for

### The cheap design

From the thick bezels to the drab black shell, the Amazon Fire is certainly not a looker

### Display woes

Some users will soon spot the pixilation found in most menus, especially when watching movies

## Verdict

A solid effort from Amazon who have priced it correctly for new and seasoned Android users alike



# Amazon Fire tablet

At £50, can you afford not to purchase the Amazon Fire tablet?

**How much tablet can you expect for £50?** The answer, if you ask Amazon, is quite a lot. The Fire is the latest forked-Android tablet to arrive from the online shopping juggernaut and it's the cheapest to date. While the Kindle nametag has been dropped, there are plenty of similarities between this and its older counterparts.

The reinforced plastic build, along with some of the biggest bezels we've seen in years, encase the entirety of the Amazon Fire – making it look budget in every sense of the word. It's also fairly weighty, even more so for a 7-inch tablet, but not so heavy that you'll be getting wrist cramps. All the usual ports can be found on the sides of the device with the added extra of a microSD slot to help expand on the paltry 8GB storage you have readily available to you.

While it's Android at its core, version five of the Fire OS is one of the more abstract forked versions of Android we've seen. Every menu is related to Amazon's ecosystem and if you're a regular user of its eBook system or subscribe to Amazon Prime, everything you need will be right here. Fire OS plays nicely with the quad-core processor, so everything feels speedy and it's not too heavy-handed on the battery either.

With Amazon's media empire at your fingertips, it seems slightly peculiar that a suitable display wasn't included. Cutbacks for a £50 price are expected, but the IPS 7-inch display offering here is underwhelming. There's some slight pixilation when watching films, but it's more noticeable while browsing everyday apps. However, colours are decent and the few animations on offer do add a nice stylistic twist.

The other area in which cutbacks are immediately obvious are the cameras. A ropery 2MP rear camera isn't up to much, even with the included HDR mode enabled, and the VGA front camera should only be used for video calls. When similar cut-price tablets are upping their camera game, Amazon certainly won't be pulling in fans of taking selfies.

All things considered, Amazon's latest attempt at an impulse-buy tablet is a good one. For the average user, it offers nearly everything you could need for a good price and it's perfectly suited for those who are heavily involved in Amazon's ecosystem. That said, cutbacks are noticeable, but if you can live without a high-quality display or camera then you'd be silly not to pick up this bargain-basement tablet. ■



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# Samsung Galaxy

## Tab S2

Is there still a market for high-end Android tablets? The Tab S2 looks to prove that there is

While the market for Android tablets is getting bigger year-by-year, the actual production of them has significantly shortened in 2015.

Samsung in particular, who was once touted as oversaturating the Android ecosystem, has dramatically scaled back its production line, so much so that the release of the Tab S2 was more of a surprise than anything else.

As soon as you clasp your eyes on the Tab S2 it's instantly recognisable as a Samsung creation. The physical button at the bottom of the device is one of Samsung's trademark inclusions, plus the design of the rear camera pays homage to tablets from yesteryear. There's little to shout about in terms of design here, but it's incredibly light. Weight has been shaven off thanks to the slightly muted plastic build and you'll find metal edges do add a certain robustness to the device.

Ports are at a minimum, but with the Tab S2 being oriented for those who primarily use their device for portrait tasks, you'll find both the charger and jack placed at the bottom. However, the headphone jack isn't best placed if you're using the Tab S2 in landscape mode, yet it isn't a deal-breaking feature to say the least.

One of the usual pleasures of using a Samsung device is that you get to play with an AMOLED display. The differences between your traditional LCD and AMOLED displays are significant, and it really shows off the 8-inch

offering on the Tab S2. Colours are fantastic and are the perfect accompaniment for those who like to partake in photo editing, while the lack of pixilation in icons and animations highlights just how classy the display is.

Partnering the display is a 64-bit octa-core chipset and 3GB RAM. On paper this should be a winning combination and it is for the most part. The most advanced tasks are easily taken care of, but Samsung's own TouchWiz interface still suffers from the occasional lag when moving between menus; what's more, launching apps is

on the slow side. We would hedge our bets on this being a software problem rather than anything hardware related.

Nevertheless, Samsung has always been at the forefront of embedding new features into their devices and the Tab S2 is no different in this regard. The home button doubles up as a fingerprint scanner for those wanting to add a layer of security, which works flawlessly, and this is also one of the few tablets that are currently running Android 5.1 with a guaranteed upgrade to Marshmallow in the pipeline.

### Metal edges

The inclusion of metal edges is a handy feature for a couple of reasons. For one, it adds a design twist for an otherwise stale device, but it also helps to add some robustness to the Tab S2 as well

### Enjoying AMOLED

If you've spent a lot of money on a tablet, you of course want a display that will be worth using. AMOLED is miles better than any normal LCD screen and really makes the best out of anything displayed

### Keep it portrait

With the home button at the bottom of the display, it is best used in portrait mode. However, there are no real concerns to note if you prefer holding it in landscape instead





All of this razzmatazz on the Tab S2 does come at a cost though, in more ways than one. First, at £319 the Tab S2 is a costly investment. Considering the likes of the Nexus 10 and iPad Air 2 are cheaper, and in many respects better, you'll have to be a diehard Samsung fan to invest in one of these. Similarly, while the 4,000mAh battery may look good on paper, it drains super fast. So fast in fact that it probably won't get you through a whole day without you reaching for the charger. Last but not least, there have been some major camera cutbacks here. The 8MP rear camera doesn't include a flash so low-light photography is near impossible, but the end results for everyday photography aren't much better either.

After spending a while with the Tab S2, it's clear that it really could have been so much more than what it currently is. While the build and display are certainly highlights, the performance issues, the poor battery and a nearly unusable camera leave this as simply another tablet not worth getting excited about. ■



#### Pack a charger

Battery life is arguably the biggest setback with the Tab S2, so much so that you'll want to make sure you pack a charger on your travels. Don't expect to get too much done on the tablet between charges

#### Pixel, not perfect

Including a camera on a tablet is all well and good, but not if massive corners have been cut. The lack of a flash function means that you won't be able to take any usable photos in low light at all

#### Ultra lightweight

One good thing this tablet has going for it is just how lightweight it is. At 265g, over 200g lighter than the iPad Air, it certainly won't tire on your wrists when holding it

# Samsung Galaxy Tab S2

£319/\$399.99

» More information [samsung.com](http://samsung.com)  
» Supplied by **Samsung**

## Best deal



£23.00  
per month  
No up front cost



£29.00  
per month  
£29 up front



£38.00  
per month  
£29 up front

## Technical specs

- » Operating system..... Android 5.0.2
- » Processor ..... 1.9GHz octa-core
- » Memory..... 32/64GB storage / 3GB RAM
- » Dimensions..... 198.6 x 134.8 x 5.6 mm
- » Weight..... 265g
- » Display size ..... 8-inches
- » Display resolution..... 1536 x 2048 pixels (320 ppi)
- » Front camera..... 2.1MP
- » Rear camera..... 8MP
- » Connectivity ..... Wi-Fi, Bluetooth 4.1
- » Expansion slot..... microSD to 128GB

## Battery life

You'll struggle to get a day of usage out of the 4,000mAh battery included here

## Good for

### Solid design

The plastic build isn't the best out there, but the metal edges offer a nice balance

### The AMOLED display

Everything looks fantastic when displayed through Samsung's patented AMOLED technology

## Bad for

### TouchWiz woes

3GB RAM can't save some noticeable lag appearing at times when using TouchWiz

### Rubbish cameras

Many key features of a traditional mobile camera have been removed and what's left isn't worth using

## Verdict

If there has ever been a tablet that could have been so much more, then this is it





## The latest OS

The X98 Air II came preloaded with Lollipop 5.0 and Windows 8.1. The X98 Pro upgrades both sides with Lollipop 5.1 and Windows 10 preinstalled. There's no free year of Office this time though, instead you only get one month

## RAM aplenty

4GB RAM is great for both Android and Windows 10; this is also double the memory size of the X98 Air II. The memory difference is felt much more clearly on the Windows side, where it considerably boosts performance

## Cherry Trail Atom

The X98 Pro includes the Cherry Trail T4 Z8500 processor: a mid-tier part that is a far superior chip to the Z3536F that featured on its predecessor. Built on the 14nm processor, the chip can burst up to 2.24GHz

## Storage partitioning

The X98 Pro has 64GB storage that is fairly evenly split between the two OSs. If you are so inclined, you can reflash the device with a custom partition table to adjust the split. This is for expert users only!



# Teclast X98 Pro

£219.99/\$229.99

» More information [amazon.co.uk](http://amazon.co.uk)  
» Supplied by Amazon/Gearbest



## Technical specs

- » Operating system..... Windows 10 and Android 5.1.1 Dual Boot
- » Processor ..... Intel Cherry Trail T4 Z8500 2.24GHz quad-core
- » Memory..... 64GB storage / 4GB RAM
- » Dimensions..... 240 x 169 x 7.8 mm
- » Weight..... 526g
- » Display size ..... 9.7-inches
- » Display resolution..... 2048 x 1536 (264 PPI)
- » Front camera..... 2MP
- » Rear camera..... 5MP
- » Networks..... Wi-Fi 802.11 b/g/n, Bluetooth 4
- » Expansion slot..... microSD (up to 128GB)

## Battery life

The X98 Pro's 8,000mAh battery is quite slow to charge and gave us around seven hours of use

## Good for

### Both worlds

If you want Android and Windows, your options are usually very limited. The X98 includes both

### Above average performance

The Cherry Trail processor delivers performance above that of an average Windows tablet

## Bad for

### Long days

Although battery life isn't awful, the speed of charging can be a bit painful

### Design flair

The X98 Pro looks like an older iPad and feels like an older iPad too. It's not unpleasant, but neither is it stunning

## Verdict

The X98 stays true to the formula set by the Air II, but with extra horsepower. However, the Android ROM still needs some work



# Teclast X98 Pro

Can Teclast's Cherry Trail-equipped Windows and Android tablet earn the same following amongst enthusiasts as the original did?

You might not have heard of Teclast and its X98 range, but the Air II and Air 3G have become something of a cult hit amongst enthusiasts. Purchased from big Chinese importers such as Gearbest, they represent good value and are examples of a particularly rare breed: Windows and Android in a dual-boot configuration.

Visually, the X98 Pro is identical to its predecessor. The only way to tell them apart is to look at the name on the back. They both have a white front, a silver back with volume and power buttons on the top left and ports at the bottom. Fit and finish is very good overall, certainly better than you might expect at this price and the positive impression continues with the 2048 x 1536, 9.7-inch screen (as seen in some iPad models), which looks great.

Where the X98 Air II could feel sluggish, the upgraded Z8500 processor (a 14nm Cherry Trail part) ensures both Windows and Android run smoothly. Our unit came preinstalled and preactivated with Windows 10, set in English. The Android side was configured in Chinese,

although this was easily changed. Windows 10 runs perfectly with a solid software build, but the Android side is a mess with random apps preinstalled and an oddly off-centre navigation bar. The device does include over-the-air updates for Android though, so we're hopeful that things will improve. Fortunately, switching between Android and Windows is easy thanks to a built-in application or a power-on button shortcut.

With a new and faster processor, the X98 Pro runs at a higher temperature than its predecessor, particularly when taxing the tablet, for example in a gaming session. This is well managed by throttling performance in order to bring temperatures down, but it's unfortunate that this is required as it serves to negate one of the main benefits of the upgrade.

The X98 Pro probably doesn't represent the tablet that is going to propel Teclast into the mainstream, but it does still offer an intriguing choice for the enterprising hacker and there's little doubt that Teclast fans will tweak the device into an even better machine. ■



From the makers of **Android** magazine

# Samsung Galaxy

## The Complete Manual

The independent handbook for Galaxy users

For all Galaxy owners



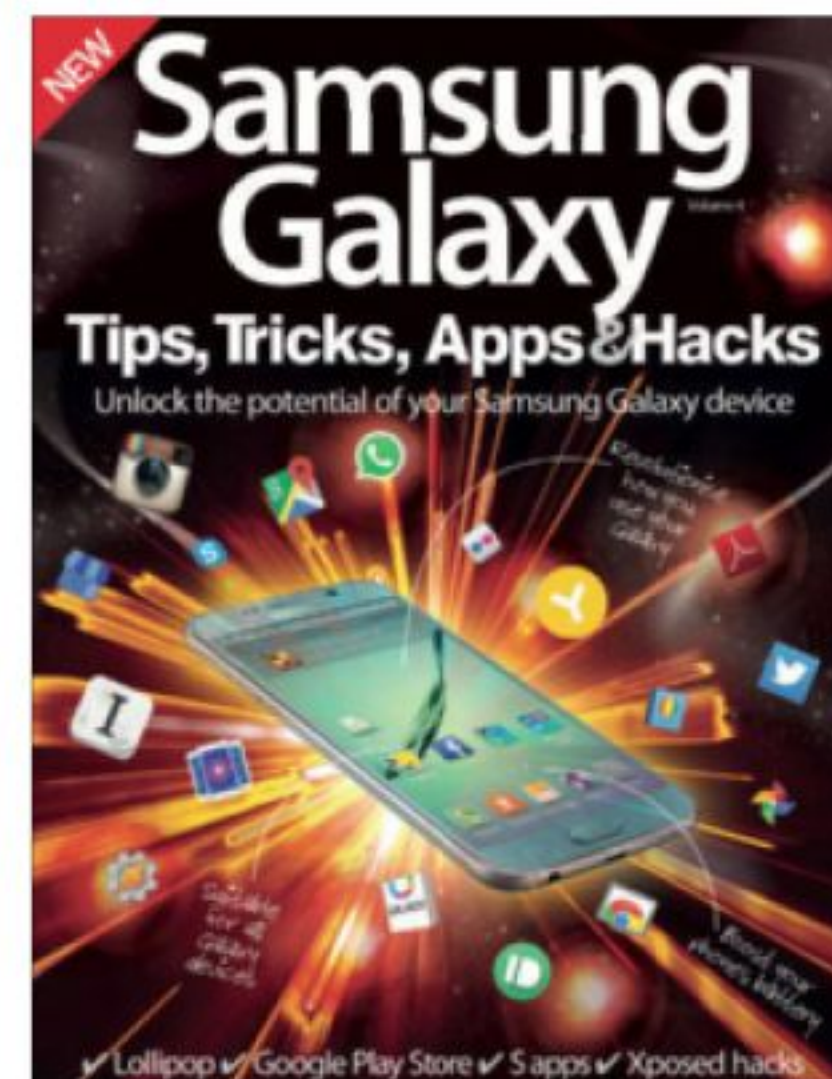
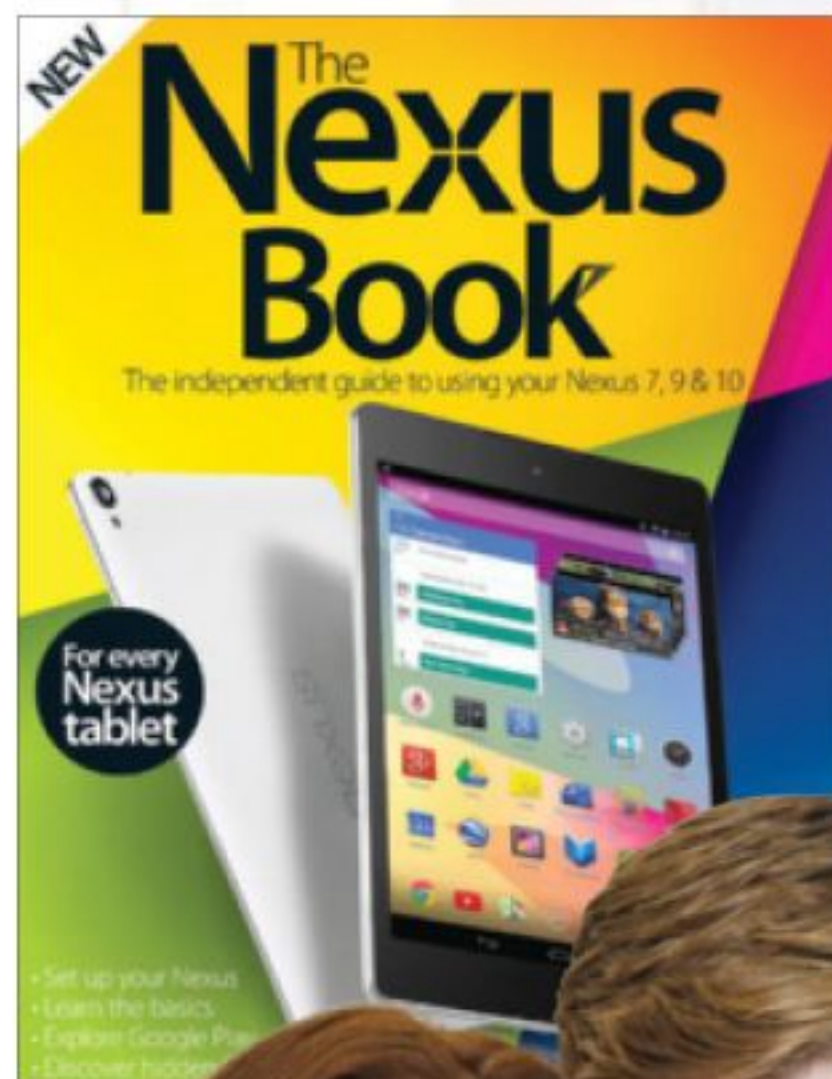
# Samsung Galaxy

## The Complete Manual

No matter what Galaxy device you have, this book will help you get the most from your phone or tablet. Packed with easy-to-follow guides to all the essential features, functions and apps, this is the perfect book to help you master your Galaxy.



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## Osomount Smart Plus

This universal smartphone mount promises a safe hands-free solution when you're driving

The problem with hands-free mounts is that many of us upgrade our phones more often than we bother to upgrade accessories like this, because let's face it, while they're necessary, they're not that exciting. So a universal smartphone mount is the kind of kit you can invest in and never have to think about again.

Osomount's offering fits phones up to 3.5-inches wide thanks to its extendable bracket that locks in place to hold your phone securely. This sits on a gimbal head that can rotate around 360 degrees or flip upwards 90 degrees to hold your phone flat, giving you the best viewing angle wherever you place it. It sticks onto your dashboard or windscreen with its spectacularly gummy mount, which can be refreshed with water if it starts to lose suction. The suction pad itself can be locked to the mounting bracket to ensure your phone stays super secure. The padded bracket prevents vibration damage to your phone, while an NFC chip in the mount will, after a bit of setting up, enable you to open an app – like maps or a music player – when docking.

So there you have it! It's not exciting, but it is eminently useful. Go out and get one of these so you can spend your time shopping for more interesting things.

» Price £19.99/\$30.23

» More information [osomount.com](http://osomount.com)



The super-sticky suction pad will fix to windscreens and dashboards. If it loses suction, just refresh it with warm water



Rotate the screw at the back to lock the bracket in place. You can also lock the suction pad using the clip at the bottom

### Universal

It doesn't matter what type of smartphone you own, because the Smart Plus is compatible with virtually any device, even huge phablets

### Multi-angle rotation

Rotate your phone around 360 degrees or flip it straight up to get the best viewing angle from the driving seat

### NFC enabled

If your phone is NFC enabled then, with a little bit of work, you can set it up to open a specified app when you dock the phone





# Braven Lux

A smart alternative to dancing around your handbag

Bluetooth speakers: we've seen pretty ones, ugly ones, cheap ones, absolutely crazy-expensive ones, ones shaped like mushrooms, stormtroopers and even the Bugdroid himself.

The Braven Lux is definitely one for the ladies, as it's shaped like a tiny clutch bag and features an Art Deco design. It's available in three colours – Pearl, Jewel (a sort of Radiant Orchid mauve) and Gold, which is by far the one that most lives up to its name. Despite its delicate looks, it's a tough little cookie with anti-shock housing and durable, rubberised controls. The only fault we have with the build quality is that the cap over the jacks can be removed completely, making it easy to lose

when you're partying. Input and output audio connectors mean it can be daisy chained to raise the volume even further, not to mention it's weatherproof and water-resistant, so it'll stand up to a shower, although maybe not a rainstorm. Despite its diminutive size it can definitely rock, with a decent bass reflex and a well-balanced sound, and it can act as a Bluetooth receiver for other devices too. It holds its charge reasonably well, less so if you use it to charge your phone while out and about, but that's a pretty good compromise to make. Unfortunately, there's a premium on the British price compared to the US, making it much more expensive in the UK.

» Price £89.99/\$99.99

» More information [braven.com](http://braven.com)



## Luscious looks

The Gold model is definitely the most luxurious looking of the three when it comes to colour – chic and sophisticated rather than brassy or tacky

## Water resistant

You can't drop it in a swimming pool, but its water-resistant housing will do well enough at beach parties or during light rain



Volume controls, power, pairing and call functions are accessed via these rubberised buttons



Check the battery, charge the device, charge phones and use audio in/out by popping the cap off





# SwiftKey Neural Alpha

A keyboard for your Android with more human-like word predictions



Launched in 2010, the original SwiftKey keyboard pioneered some now familiar

features, most notably the three-word suggestion bar. This feature has traditionally been powered by the developer's n-gram technology that provides accurate predictions for common phrases, as well as those learned from the user. While it does a good job on the whole, it has some limitations since it can't comprehend the underlying meaning of words and so relies on selecting those that have been seen before in the same word sequence.

The new SwiftKey Neural keyboard employs a different method based on neural networks – a subfield of AI inspired by the structure and operation of the human brain. Machine learning from millions of sample sentences has enabled it to understand complex word

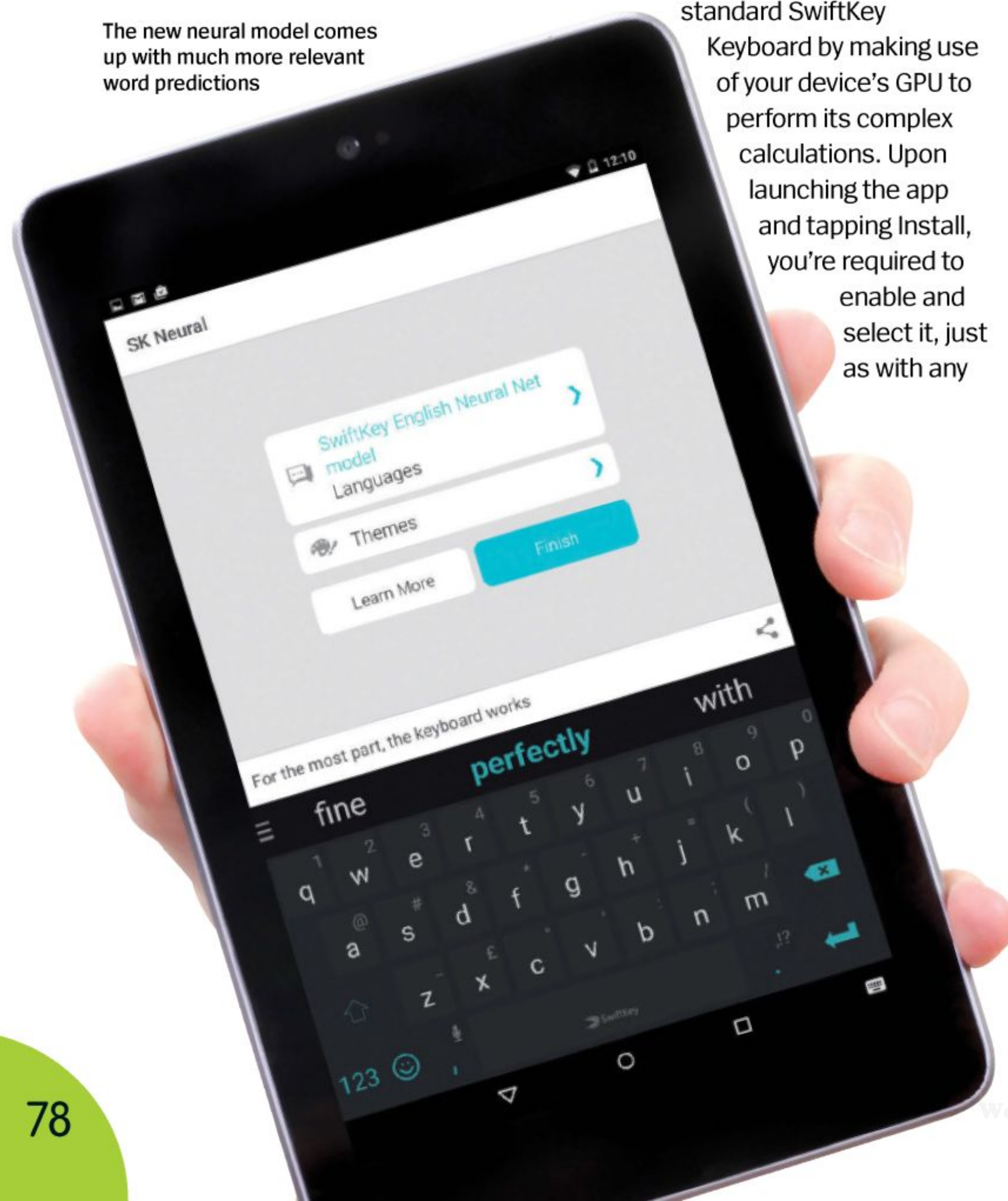
relationships, grouping them into clusters with varying proximity. This enables SwiftKey Neural to predict words even if they have never been seen in a given context before. For instance, if you start typing 'Meet you at the', standard SwiftKey prediction would come up with endings like moment, end or same. However, the new Neural version will predict more contextual endings such as hotel, airport or office.

This is an impressive breakthrough for technology, since neural network language models have until now been deployed mostly on large servers with powerful resources. Still we must note that the app is still in alpha testing, as part of SwiftKey's Greenhouse program for new ideas and, therefore, is still an early example of the technology.

The Neural app is a mere 25MB download, though it does require more processing power than the standard SwiftKey

Keyboard by making use of your device's GPU to perform its complex calculations. Upon launching the app and tapping Install, you're required to enable and select it, just as with any

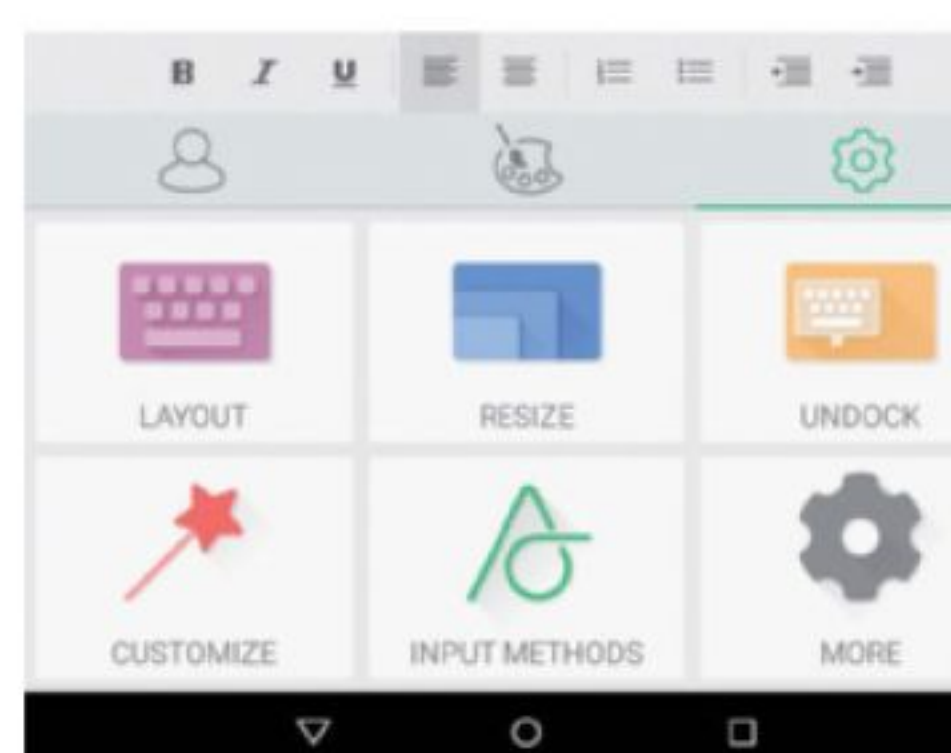
The new neural model comes up with much more relevant word predictions



How about we talk about it more at the office? I think we need to discuss the details of the trip.



I know a song that will get on your



Various options are available to alter the size and layout of the keyboard



The keyboard can be undocked and dragged up the screen

other third-party keyboard. While there's a menu for languages, it currently only supports US English. There's also a choice of two themes – purple or black – plus various layout and input options. Since Neural works in such a different way to the standard SwiftKey, there's no option yet for it to scan your emails and social networks for clues to your writing style, nor can you import your old custom dictionary.

In practice, we found it worked well with no lag while it made intelligent contextual suggestions for the next word – it's fun just tapping suggestions and seeing what it comes up with next as it writes its own sentences! Swipe-typing works reasonably well, if not up to Google's standard and any US spellings are easily altered by hitting backspace and selecting the British version. While an automatically added space after each word may surprise some users, it saves time and is removed if you add a full stop.

While the lack of more languages and themes is disappointing, it's perfectly understandable at this early stage and SwiftKey Neural has made a very promising start.

## 2 hour wonder

Want your money back? You've got 120 mins to decide!



### » 0-40 minutes

A shame there's no support for multiple languages yet

### » 40-80 minutes

Predictions are much better than on most keyboards

### » 80-120 minutes

It's not perfect, but it's still a very good start

keep refund

## » specification

Price Free

Designed for: Phone

Requires Android: 4.4 and up

## » verdict

Performance 🐼🐼🐼🐼🐼

Design 🐼🐼🐼🐼🐼

Value 🐼🐼🐼🐼🐼

While languages and themes are lacking, the predictions are accurate



» like this? try this!



SWIFTKEY KEYBOARD » While not as smart, the standard SwiftKey keyboard learns your phrases and slang terms



# Perch – Simple Home Monitoring

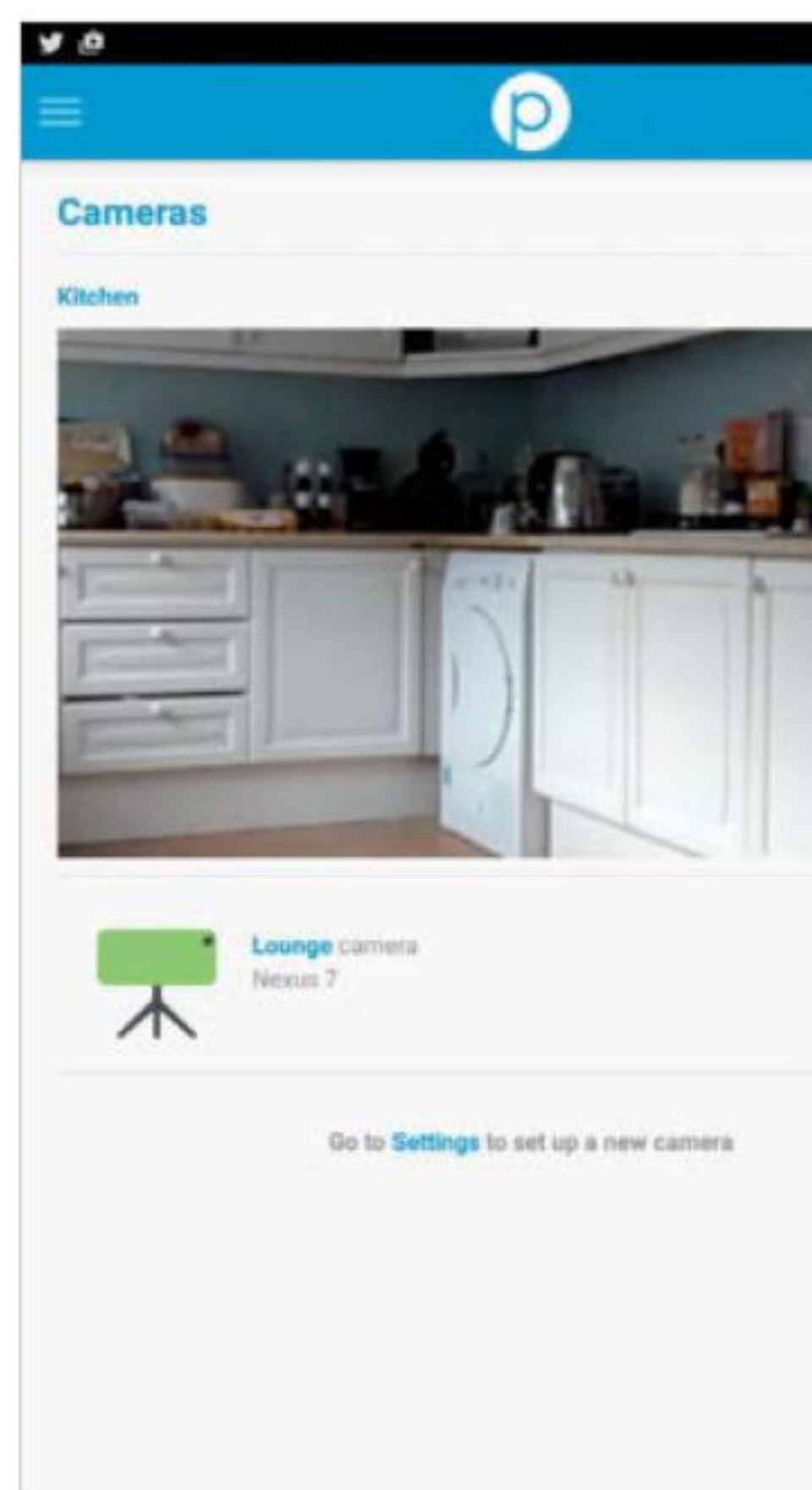
Use spare devices as security cameras



Perch enables you to use any spare Android devices or computer webcams as security

cameras for your home or office, thereby offering a low-cost alternative to a dedicated home security system. While we've seen this kind of thing before, most notably in Alfred (reviewed in issue 53), Perch does throw in a few interesting extra features.

Just sign up to the service via email then set the device up as a security camera. Hitting Play starts recording the rear camera view and sends the footage to Perch's servers – this may raise some



privacy concerns as currently there's no option to store video locally. You can toggle audio on or off, switch between a device's rear or front camera and do all of this remotely from another device.

Alternatively, you can visit the service's website ([getperch.com](http://getperch.com)) to view all of your camera feeds. From there you can also access a few features not yet available in the app. These include the ability to set custom alert zones: just select grid squares on a camera feed to set an area to monitor and choose whether to receive alerts via mobile and/or email. Well that's the theory. In practice, motion sensing was triggered correctly, as indicated by the colour-coded segments of the

View multiple cameras from the app and turn them on and off

feed's timeline, but we never received any notifications for them. In addition, the app lacks the website's ability to play back footage and schedule video recording. However, it does have one extra feature: the Push to talk option with someone on a camera device.

It must be noted that Perch is still in beta and we experienced a fair few technical issues. Sometimes cameras just wouldn't connect.

## » specification

**Price Free**

**Designed for:** Phone

**Requires Android:** 4.0 and up

## » verdict

The app is unreliable and lacks many of the website's features, but it has potential



## » like this? try this!



**Alfred – Home Security Camera**

A similar service with motion detection that uses a Google account to connect cameras

# Parchi – Quick notes & lists

Write quick notes on your phone from your lockscreen



The standout feature of this neat note-taking app from Microsoft is the ability to create a new note from the lockscreen, making it easy to jot down a few words very quickly: just tap the widget button in the top-right corner, type some text and add an optional photo. It'll also show



any notes you have pinned to the lockscreen. Another key aspect is the ability to add Twitter-style hashtags to notes that can then be placed in line or selected from a menu, which makes it easier to search for notes by topic. While creating or editing a note in the app, you can easily add a reminder date and time, then favourite it. Other options enable you to change the colour, add a photo and create a list. Strangely, notes have no titles and you can't reorder them.

» **Price Free**

» **Designed for** Phone and tablet

» **Requires Android** 4.2 and up



Notes can be colour coded or have multiple tags and photos attached

» **best alternative**

**EVERNOTE** » Lets you add various file types to your notes, as well as enabling you to organise web articles

# KnockOn

Double tap the screen to make your phone sleep



Once activated, this ingenious app enables you to make your device

sleep by double tapping the homescreen. We're not quite sure how useful it is, but it's probably quicker than reaching for the power button. There's also an option to wake the phone using the same gesture, although this results in the screen staying just black, which is



likely to drain your battery faster. An optional IAP (£0.88/\$0.99) for the Pro version lets you set a sleep time, as well as customise the double-tap speed.

» **Price Free + IAPs**

» **Designed for** Phone

» **Requires Android** 4.1 and up



# Pixolor

Find the exact colour of any pixel



Once you give it access to capture everything on the screen, Pixolor displays a floating circle that shows colour information – RGB code and nearest Material Design shade. So by dragging it around and pinching the screen to zoom, you can discover the precise colour of anything. It also shows the distance moved and lets you measure areas. Tapping a colour



code copies it to the clipboard or alternatively, use Pixolor's notification in order to share it or possibly open the app for a colour wheel and palette.

» **Price Free + IAPs**

» **Designed for** Phone and tablet

» **Requires Android** 5.0 and up





## Parlay

Challenge friends and stake money on it

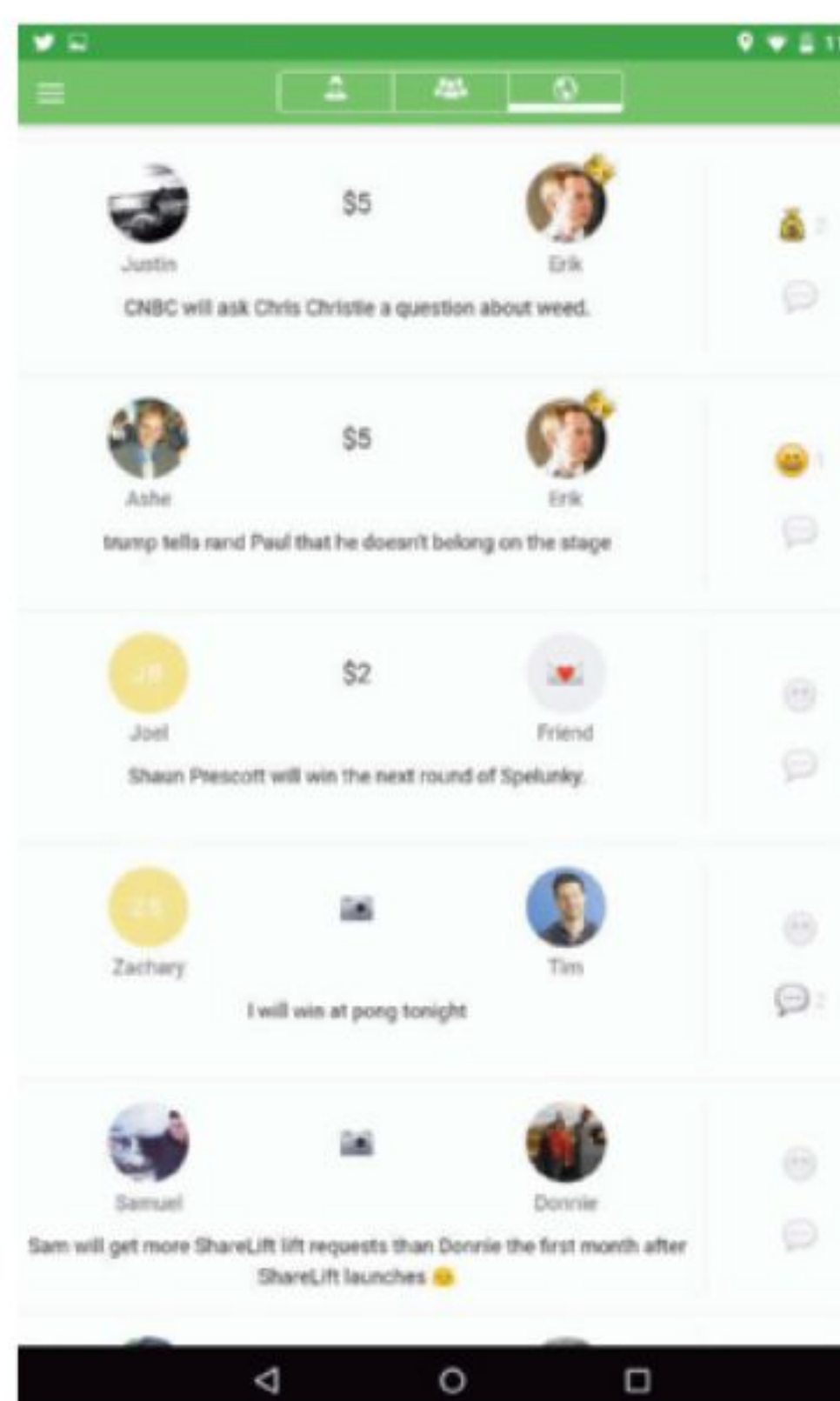


Apparently a parlay is a cumulative series of bets in which winnings are used

as a stake for a further bet.

Nevertheless, this isn't a standard gambling app. Instead it's challenges between friends with the loser agreeing to pay money, make a donation to a charity or post a picture – of the event or gift, or maybe even a selfie of them looking defeated. Potentially it could be used to motivate someone to complete a goal, such as losing weight.

Monetary transactions are enabled by transferring Bitcoins to your Parlay vault, which may put some people off. Still the sign-up process seems pretty secure, involving linking to a Facebook account and entering a phone number for a SMS verification code. You then have to accept the terms and conditions that remind you parlays aren't bets and are non-binding so payment is voluntary. Since gambling on sports is banned in most US states, you're not permitted to create parlays based on real sports results, which is a shame.



Get some ideas for wagers from the ones listed under the Global tab

- » **Price** Free
- » **Designed for** Phone
- » **Requires Android** Varies with device



## EveryStory

Share narrated photo stories and memories



The idea for everyStory came about when its founder Dave Keene

was diagnosed with cancer and realised that his young son might never remember his voice or hear his stories. A way of preserving and sharing memories, the app enables users to record voice narration for a series of photos.

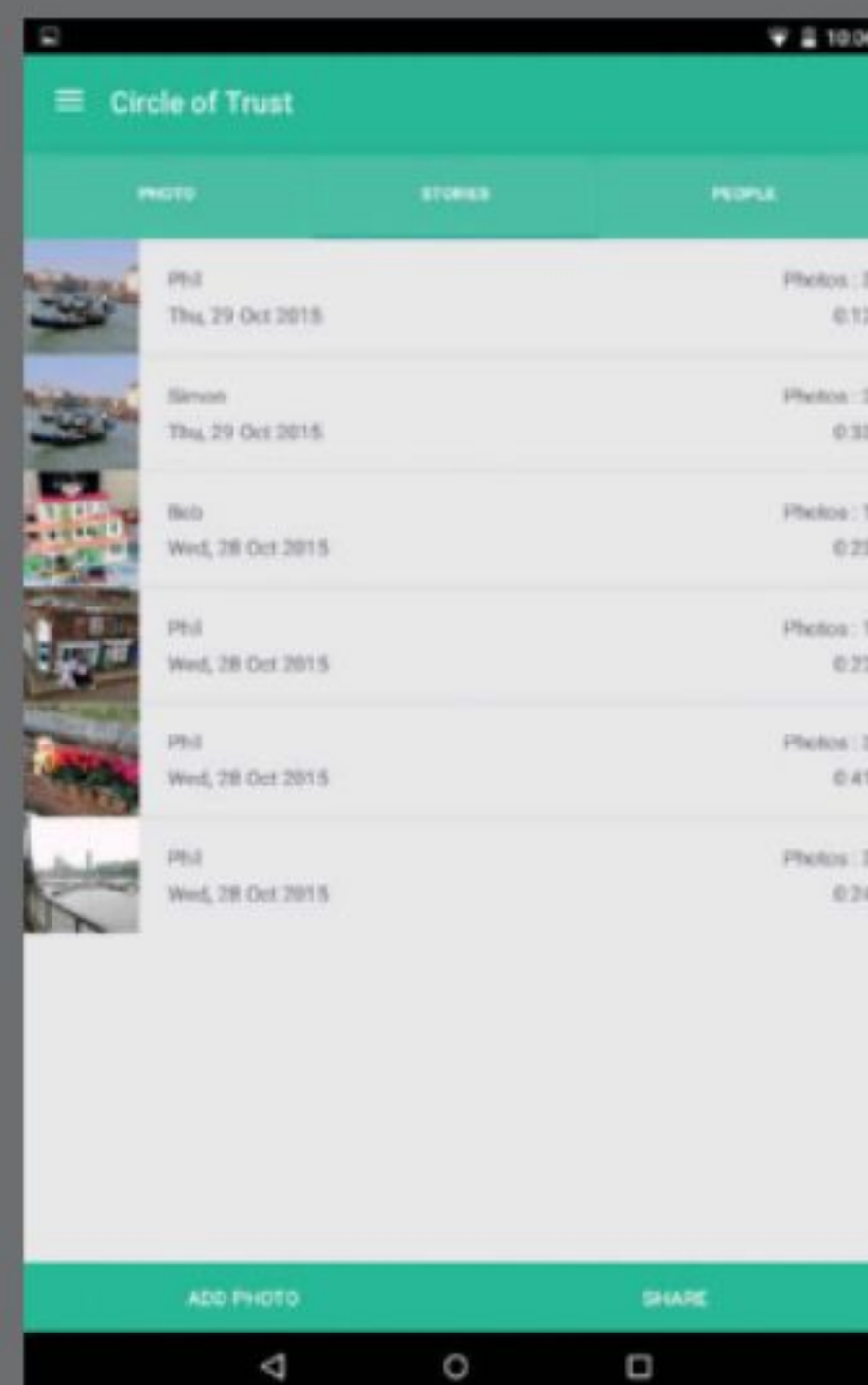
After signing in via Facebook or email, you're prompted to create a

sharing group to which you can invite friends and family – again via Facebook or email. Multiple groups can be created and invitees can be either read-only viewers or collaborators who can upload their own photos and stories. The latter could prove useful for sharing family memories or for something like a local history society.

Once a group is set up, it's time to add some photos to it.

Disappointingly, only locally stored images can be used rather than having access to the Google Photos gallery, so you'll need to download pictures you want to use first. It also takes a little while for the selected photos to upload and appear in the group's Photos tab. There is a free limit of 500 photos, but unlimited storage costs \$3.99 per month.

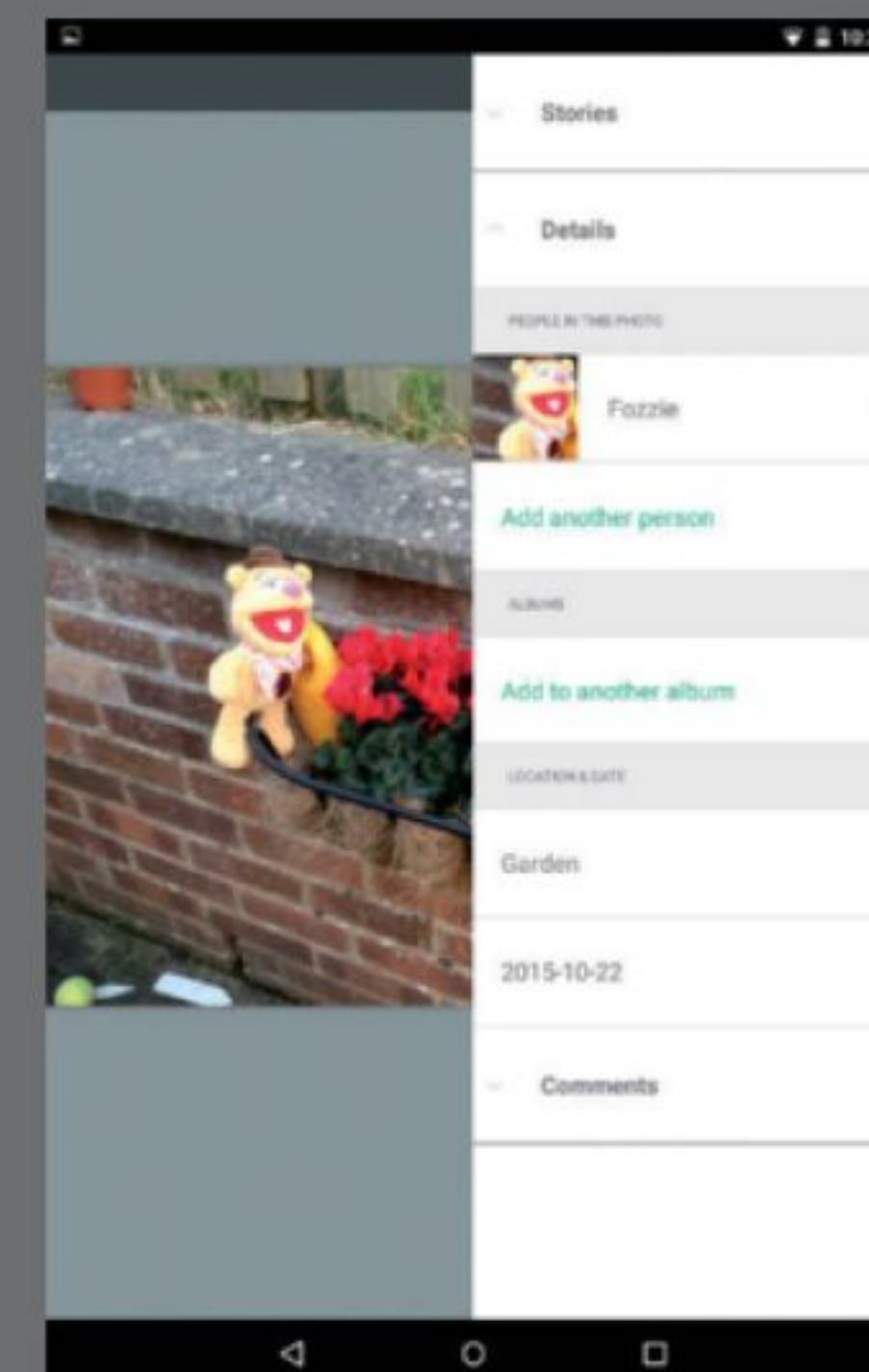
Select a photo and tap the microphone icon to start recording



The Stories tab shows the tales you have recorded and the narrators' names



You need to upload photos to the group's gallery to use them



You can share your narrated stories via facebook or email

## Today's Front Pages

See headlines from all around the world



If you're one of those people who enjoys glancing at the newspaper

headlines whenever you visit a newsagent or supermarket, this app may well appeal to you. Created by the Newseum.org, the interactive news museum, it reveals the top headlines for the day. While the default view shows US publications, you can switch to the World tab or the Locate map to show local ones – although only *The Guardian* and

*The Times* make an appearance for the UK. There's also a search facility to look for a name or location. It's a shame you can't zoom in on each front page to read the smaller print, but tapping the link icon will at least take you to the relevant website. Another disappointment is that unlike the Newseum.org site, there's no archive option to see headlines for key events in recent history.

- » **Price** Free
- » **Designed for** Phone and tablet
- » **Requires Android** 4.0.3 and up



» like this? try this!



**WORLD NEWSPAPERS** » A handy directory of links to over 6,000 international newspapers and magazines



See the top ten headlines from across the globe or filter the front pages by location



your first story. After inputting the speaker's name, a five-second countdown gives you time to get ready. Narrate away and when you want to change photos, tap the icon in the top-left corner to see the group's gallery and select one. In this way you can create a narrated slide show. Extra details and comments can be added to the photos, as well as tagging people in them who then appear in the People tab.

It's a brilliant concept, but the Android app still needs a fair amount of work as we experienced some lag and numerous crashes.

#### » specification

**Price Free + IAPs**

**Designed for** Phone and tablet

**Requires Android** 4.0 and up

#### » verdict

**Performance** 🐼🐼🐼🐼🐼

**Design** 🐼🐼🐼🐼🐼

**Value** 🐼🐼🐼🐼🐼

The app still needs work, but the memory-sharing concept is excellent



#### » like this? try this!

**PhotoStage Slideshow Free** Create a slide show from your photos and videos with narration and a soundtrack



#### 2 hour wonder

Want your money back? You've got 120 minutes to decide!

- » 0-40 minutes**  
There's no direct access to the Photos gallery
- » 40-80 minutes**  
Recording narration for photos is easy enough
- » 80-120 minutes**  
Sadly the app lags and crashes frequently

**keep** **refund**

You can easily switch photos while recording your narration

## Boomerang from Instagram

Be kind, please rewind



Instagram's latest spin-off app reminds us of Apple's Live Photos, which shows

a short video of the scene when tapped. Admittedly it is slightly different as Boomerang lets you shoot very short videos by taking a rapid burst of ten photos. To obtain effective results, just capture something moving. For instance, you could take a selfie whilst making a funny face or capture a pet moving its head. Just press the button to

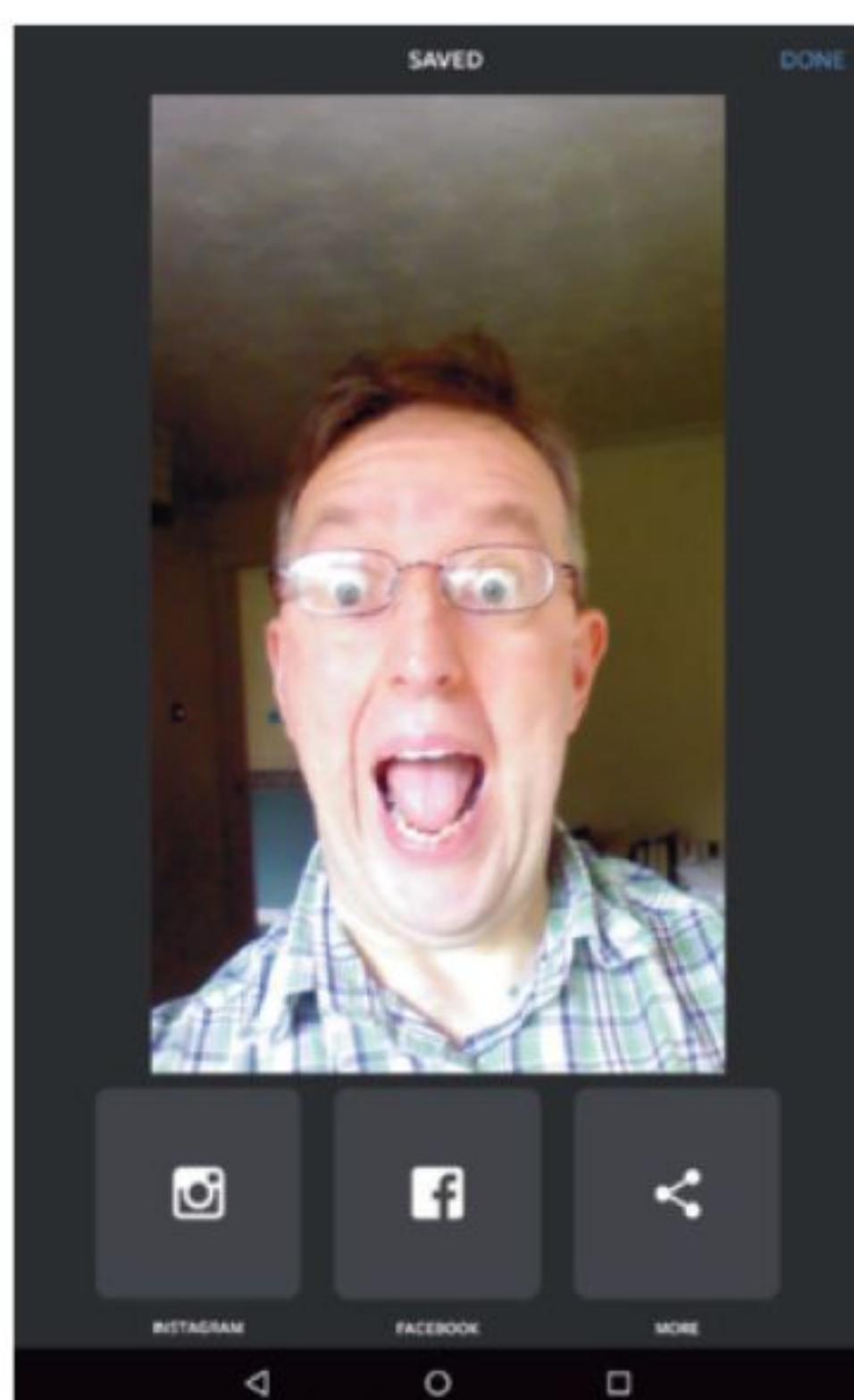
shoot, but try to keep the camera still to avoid any juddering. While the resulting looping videos are reminiscent of Vines, instead of jumping back to the start each time, they actually reverse playback to return to it, which can result in some amusing boomerang effects.

- » **Price** Free
- » **Designed for** Phone
- » **Requires Android** 4.3 and up



#### » like this? try this!

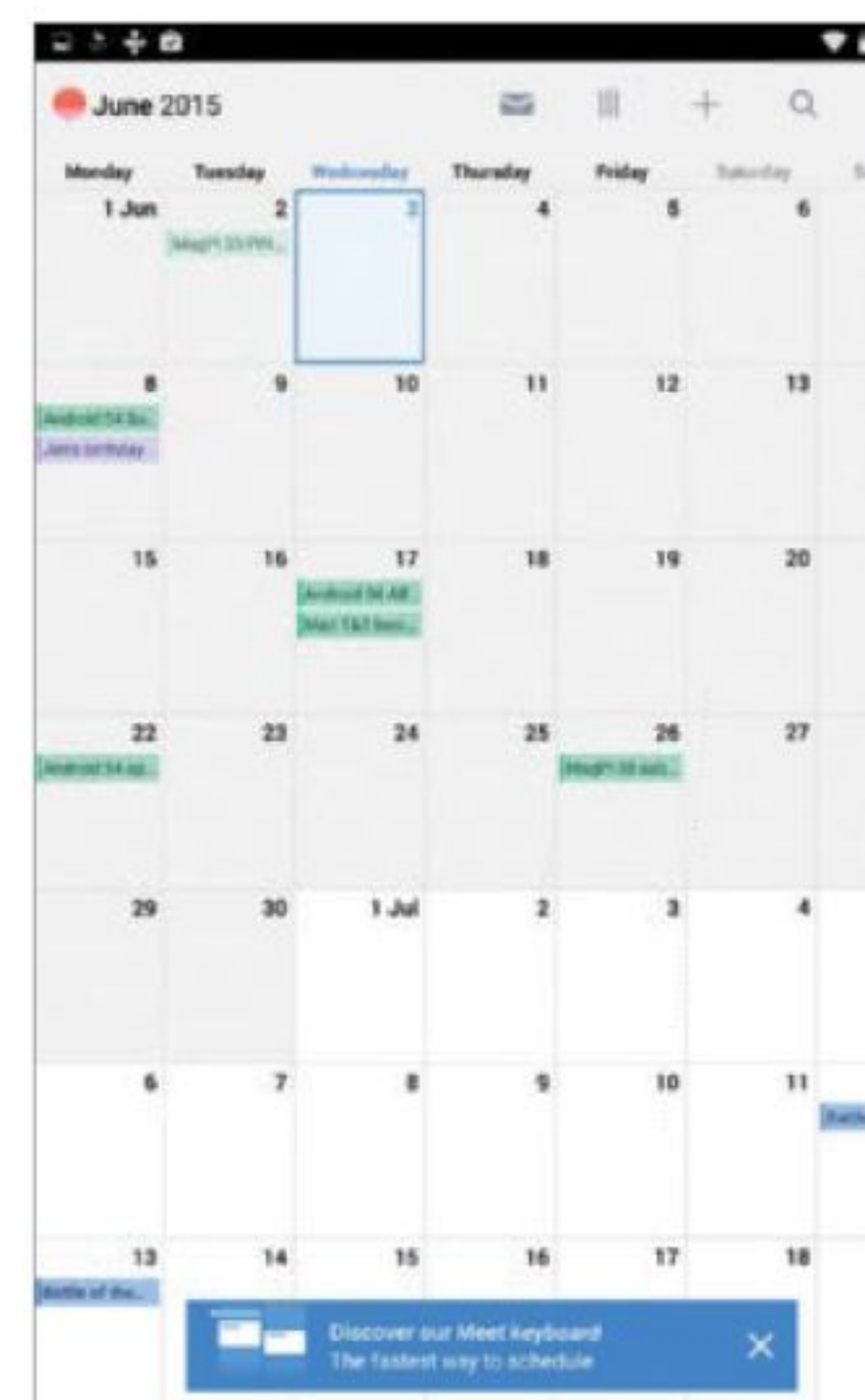
**RIFF** » Facebook's app enables friends to shoot and add clips to build a collaborative video



Videos are about a second long and can be shared by various means

## quickhits

5 top apps for...  
**Productivity**



### Sunrise Calendar Free

The best thing about this calendar is the way it integrates with so many external services, including LinkedIn and Asana. It even features a special keyboard to help you quickly arrange your meetings.



### Quip: Docs, Chat, Spreadsheets Free

This cross-platform office suite makes it much easier to collaborate with colleagues on text documents and spreadsheets using shared folders and talking to them via a built-in real-time chat screen.



### Asana Free

Eliminating the need to keep track of multiple email threads, Asana puts all your team's tasks lists and communications in one handy place. It's free for teams of up to 15 people too.



### IF by IFTTT Free

Use it to link apps and services to create custom automated tasks, saving you a lot of time. Possible business uses include monitoring competitors and managing multiple social media accounts.



### RescueTime Time Management Free

RescueTime will tell you what you're spending your time on, at least on your smartphone, by tracking the apps and services you use. It could help you to avoid wasting time or procrastinating.





# head to head

Can Google's biggest rival create a better music app?

## APPLE MUSIC VS GOOGLE PLAY MUSIC

Having launched Apple Music for iOS in June, the service has just been rolled out to Android. However, it will have to work hard to displace the existing apps available on the Google Play store. We see how it compares to Google Play Music.

### » specification

Price **£9.99** (after free trial)

Designed for: Phone and tablet

Requires Android: 4.3 and up

### » specification

Price **£9.99** (after free trial)

Designed for: Phone and tablet

Requires Android: Varies with device

### Apple Music

### Google Play Music



Apple Music's free trial lasts for three months before you will need to pay £9.99 each month for access to its large music catalogue and great radio stations.

### VALUE FOR MONEY



Google Play Music gives you a month of free music before charging you £9.99 for its music service and playlists. However, it doesn't have Apple-style radio stations.



Apple Music asks you for your preferences in a fun way by blowing up or popping bubbles, then narrowing it down further to enable you to specify favourite artists.

### SET UP



Google Play Music doesn't take as long to set up as Apple Music and also asks for your genre preferences. It definitely has less style, but is a speedier service.



It's easy to find your way around Apple Music as the suggested albums are laid out in a screen-wide grid. The playlist screen could do with a bit of work though.

### LAYOUT



You don't have the same attention to detail in terms of design, but the headings on the app homescreen make it a little bit easier to navigate your way around.



Apple Music has more than 30 million songs available to download, which is less than Google, but it has a range of radio stations playing a variety of music.

### MUSIC CHOICE



Google Play Music has more than 35 million songs for its users to access, but far fewer free options than Apple Music. It also isn't as easy to sync existing music.



It only takes a couple of taps to add a song or album to a created playlist and you can navigate to it easily and quickly, but the layout is pretty boring.

### PLAYLIST CREATION



Adding songs to a playlist is easy and they are much more visually stimulating than Apple Music's playlist function, but it's not as well laid out as its rival.

And the winner is...



**APPLE MUSIC**

Sorry Google, but Apple Music's app is just that little bit slicker, easier to manage and has a better trial version. Google Play Music has a larger music collection, but overall the user experience on Apple's offering is superior. It's also handy if you already have an iTunes account.



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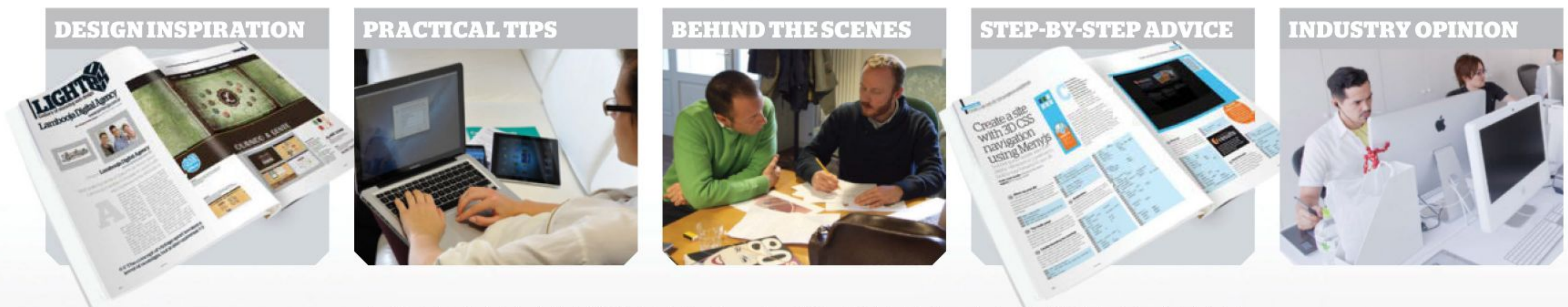


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## Minecraft: Story Mode

A chip off the old block?

**MINECRAFT** While based on the world-famous sandbox game, *Minecraft: Story Mode* is a very different prospect. Developed by Telltale Games, its episodic structure and decision-driven gameplay are similar to previous titles such as *The Walking Dead* and *The Wolf Among Us*. Indeed, you only get the first episode – *Order of the Stone* – for starters and have to purchase instalments (once they become available) for £3.91/\$4.99 each, or £11.74/\$14.99 for a bundle of four.

The gameplay is the complete opposite to standard *Minecraft*. Rather than an open world where you have freedom of how to play, Story Mode offers a confined structure – indeed, it's described by Telltale as being "like a playable television show based on your favourite game, where you are the star, and your choices and actions decide how the story is told."



Your multiple-choice dialogue decisions will affect how the story unravels



Action sequences and building involves tapping and swiping the screen

If you've played previous Telltale games then you'll know what to expect, although this game lacks the usual dark aspects and is therefore suitable for younger players. At certain points in each scene, you get multiple-choice dialogue when talking to other characters and your decisions affect how the story develops, since they'll remember what you said. If you sign up for a Telltale account and visit the website, you can even see how your choices compare to those made by other players. There

are also occasional action sequences, including some fight scenes, where you need to swipe and tap on-screen boxes.

You play the role of young Jessie, who goes everywhere with his pet pig, Reuben. There's a lot of humour in the story and dialogue throughout, so overall it's very entertaining, although some of the references may be lost on non-Minecraft fans. Jessie's journey takes him to a variety of locations as he leads a gang of misfits whose quest to impress everyone at this

year's Endercon soon turns into something more crucial.

The voice-over cast are excellent and production values high. On the downside, the choices aren't as frequent as in previous Telltale games, so it can sometimes seem like you're watching a video. It's very entertaining on the whole though and well worth a download.

» **Price** £3.92/\$4.99 + IAPs  
» **Designed for** Phone and tablet  
» **Requires Android** 2.3.3 and up



### what we've been playing

#### **Heroes Reborn: Enigma** £3.84/\$4.99

This first-person 3D puzzler is still boggling our brains as some of the later stages are particularly challenging, making full use of Dahlia's super abilities such as telekinesis and time shifting.



#### **Raywar: Pandemonium** £0.88/\$1.12

Our eyes may take a while to recover from the retina-burning OTT visuals, but racking up high scores is compulsive in this retro twin-stick shooter.



Recommend a game...

» **twitter**  
@lgrobot



### Sonic Dash 2: Sonic Boom

Sonic is still running



Like the first *Sonic Dash*, this is an endless runner.

Apart from the Sonic

Boom-style graphics (complete with weird arm and leg bandages), the main difference is that you can use up to three characters in Team Play mode, swapping between them mid-race to use their abilities – Knuckles can swing from an energy grappling hook, for instance.

As well as switching between lanes to avoid hazards and jumping and rolling to attack enemies, there



Switch between lanes and jump or roll to avoid hazards and collect goodies

are bonus sections where you tilt the device to swing and collect rings and orbs – the latter power up an invincible dash move.

You can also unleash character's special powers, such as Sonic's Dash Ring Magnet and Amy's Ring Hammer. Completing challenges earns rewards including sprites that boost your abilities.

It's fun to play, if not really adding much to the Sonic genre and the IAPs overall aren't too obtrusive – for instance, you don't need to recharge your energy to play.

» **Price** Free + IAPs  
» **Designed for** Phone and tablet  
» **Requires Android** 4.0.3 and up





# Prune

A cut above most other puzzlers



If you've ever watched Monty Don doing a bit of pruning on Gardener's World and fancied having a go, this could be the game for you.

On each stage, you plant a tree that starts growing upwards. Lopping off some of its branches – with a swipe – makes the remaining ones grow further. In this way, you can shape the tree to pass around obstacles and into the light to grow blossoms – create enough to match the number of diamonds in the sky to complete the level.

While the basic tactics are easily picked up, on later sets of stages you face complications such as strong winds and restricted spaces that might require you to make some



Avoid touching the red orbs or your tree will become infected and wither

branches grow downwards – now that is tricky! There are also special coloured circles that trigger different effects when they are touched by the tree; grey ones create instant blooms, for instance, while red ones can infect your tree with a deadly virus unless you quickly cut off all of the affected branches.

No matter the difficulties, the beautiful organic graphics and ambient music make it a very relaxing and zen-like experience rather than a classic frustrating one. The only slight downside is that it's over all too quickly.

» Price £1.58/\$2.35  
» Designed for Phone and tablet  
» Requires Android 2.3.3 and up



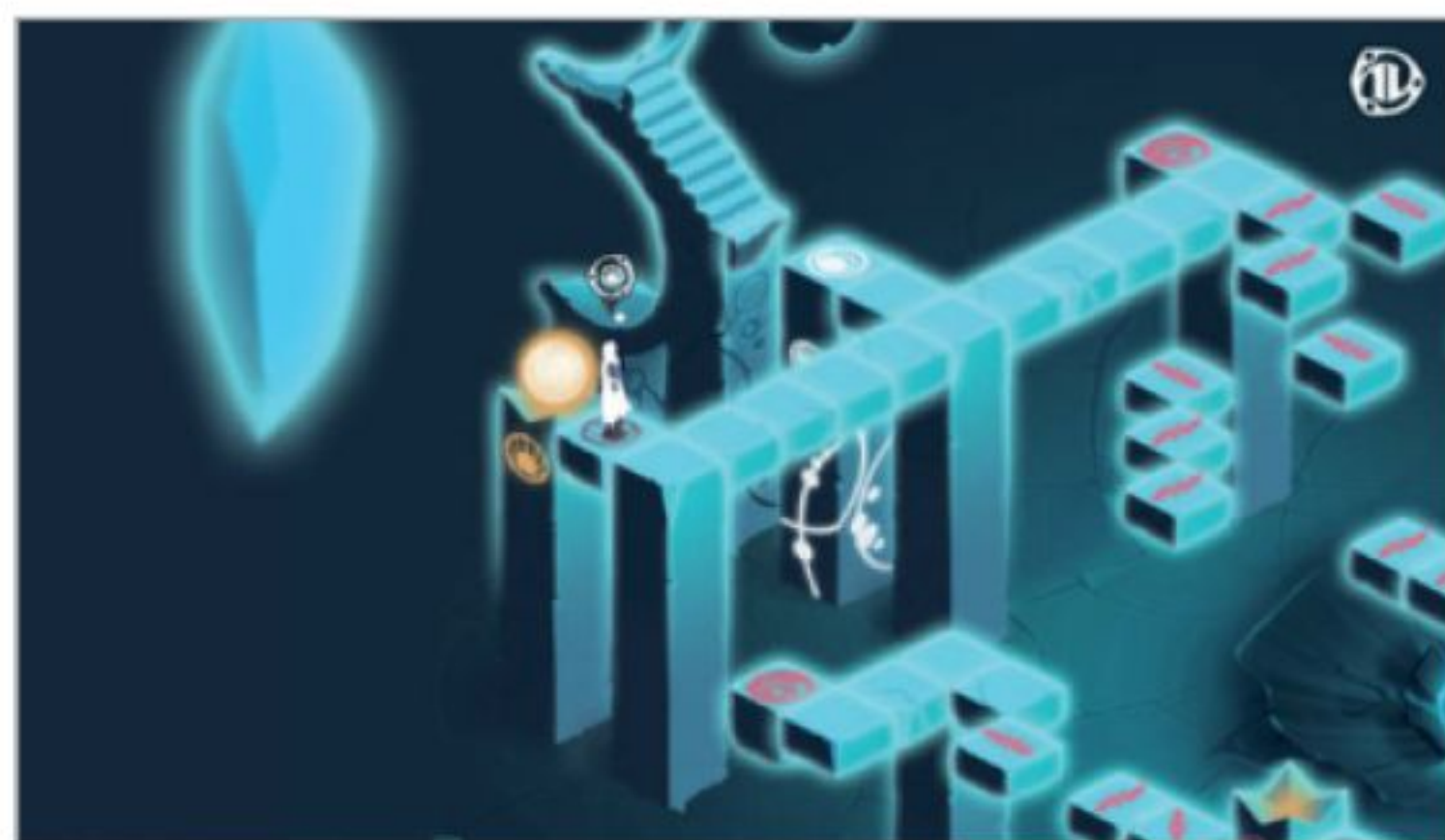
# Ghosts of Memories

A ghost of a good game



While the isometric graphics and atmospheric soundtrack evoke *Monument Valley*, this is a more traditional puzzle adventure. Much of it

involves sliding tiles around to create paths for your character to travel along. You need to power your staff with the correct energy to trigger colour-coded switches to complete each stage. So there's a lot of bouncing to and fro between energy sources and switches, including using teleports to switch between sections of the level. You can also turn totems to move platforms in a circular pattern – you need to study their movements carefully to find the right route, although it can prove laborious. Some glitchy controls add to the frustration, as sometimes your character refuses to walk onto an adjacent tile.



» Price £2.19/£2.99  
» Designed for Phone and tablet  
» Requires Android 4.1 and up

Collect energy from coloured orbs to activate switches of the same shade



# Sniper X with Jason Statham

Lock, stock and one smoking barrel



The Cockney voice commentary of hard-guy Statham adds a bit of spice to what is a standard sniping game. Rather than using a

pinch gesture to zoom your sniper scope, there's a slider on the right, which isn't quite as intuitive – nor is an on-screen trigger button. Using limited Focus power causes time to slow down to help you aim. The result of a headshot is impressively gory and there's a nice bullet's-eye view of each stage's final target being killed, if you manage to beat the time limit. It's fun for a while, although the freemium aspect rears its head as you need to spend your slowly recharging energy to play stages.

» Price Free + IAPs  
» Designed for Phone and tablet  
» Requires Android 3.0 and up



## quickhits

Don't miss out



### Dariusburst SP

£6.44/\$6.63

A remixed version of Taito's PSP game *Darius*, this is one classy side-scrolling shooter. While a little pricey, it delivers top-notch gameplay with branching levels and spectacular visuals.



### The Balloons

Free + IAPs

In 'the world's first endless floater', tap to guide your balloon up through scrolling stages, avoiding hazards such as spikes, darts and shuriken. Pixel art and chiptunes add to the charm of this game.



### Viva Sancho Villa

£3.13/\$3.99

Take one famous Mexican revolutionary, sprinkle him with surreal Day of the Dead-style cartoon graphics and mix in some clever combat graphics. The result is a memorable hack-and-slash action adventure.



### Herald of Oblivion

£4.49/\$5.99

You play a Space Marine in this choice-based digital gamebook set in the Warhammer 40,000 universe. It looks very stylish and its combination of RPG combat and a dark story should please a lot of fans.



### Clash for Dawn

Free + IAPs

This visually stunning action RPG sees you venturing on dungeon quests with the optional aid of friends. Level up your character and compete in guild wars and PvP multiplayer arenas.



### Blood Bowl: Kerrunch

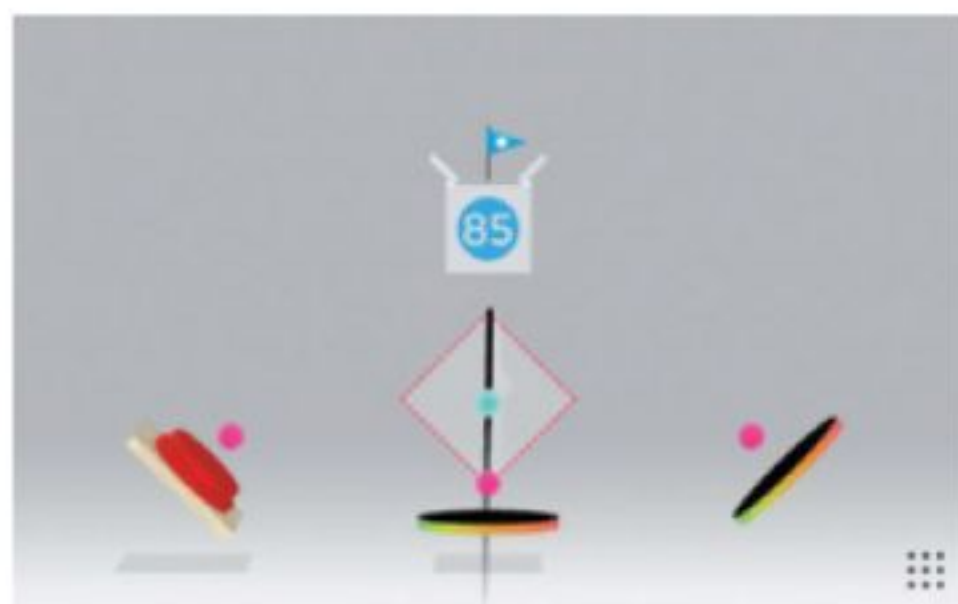
Free + IAPs

Games Workshop's classic tabletop-strategy game is a fun pastiche of American football featuring goblins, dwarfs and orcs. Sadly, while quite fun, Kerrunch is too shallow to do it justice.





“A souped-up version of throwing a paper ball”



Make use of teleports and buttons – and hit the pink orbs in Amazing mode

## Trick Shot

Warning: this game is extremely addictive!



This physics-based puzzler is like a souped-up version of throwing a paper ball

into a wastebasket. The aim on each stage is to chuck a ball so it ends up in a cardboard box. Just pull back, *Angry Birds* style, to determine the ball's speed and trajectory: release it to launch. One restriction is that you can only swipe your finger within a certain zone, which often makes stages trickier. While easy early levels get you used to the concept, things soon become more complicated with obstacles to bounce off, pits to avoid and moving items – in which case you need good timing as well as a precise aim. There are also buttons to press to move on-screen items temporarily, leading to some satisfying chain reactions.

On paper, you might expect *Trick Shot* to be frustrating, and it kind of is, but the one-more-go factor is much stronger – we just couldn't stop playing it! Tip: get a Perfect (by not touching the box sides) on all 89 standard stages and you'll unlock a secret Amazing mode for more fun.



» Price £1.49/\$1.99

» Designed for Phone and tablet

» Requires Android 4.0.3 and up



» like this? try this!



**PAPER TOSS** » This golden oldie is still just as fun as you aim paper balls at a wastebasket

## Cloud Chasers

A journey of hope... or death



This topical game tackles the issue of human migration, aiming to show it from a different perspective. The *Cloud Chasers* of the title are father and daughter Francisco and Amelia, who embark on a quest for a better life in the cities above the clouds. The latter are inhabited by a privileged elite who have found a way to harvest water from the clouds using flying machines, simultaneously leaving the land below in permanent drought. Our

duo's adventure therefore involves trekking through a series of randomly generated deserts in an attempt to reach the Spire.

The main top-down view sees you tapping to guide the pair through the desert, where various hazards are encountered. Most notably, they have a very limited supply of water, so heading for clouds is essential to harvest more. This is achieved by Amelia flying a glider, steered by tapping the left or right side of the screen, to gather the precious droplets. Careful piloting is required



Investigating items found in the desert can prove helpful or damaging



Collected items and water can be traded in the shop between deserts

to avoid mountains and helicopter-like cloud harvesters which sometimes fire at you. If it gets too dangerous, it's best to land the glider to avoid further damage, although it can be repaired with a toolkit. As well as being bartered for at a shop between stages, helpful items are gathered from certain encounters on the map, involving text descriptions and a multiple-choice system. These may also prove hazardous, however, as we found out when Francisco was bitten by a snake, got sick and soon died – requiring us to start again from scratch. It's a brutally hard game in this respect, involving numerous life or death decisions, although perhaps that mirrors reality and therefore reinforces the main message. The downside is that this results in a lot of frustration.

## Magic Flute: Puzzle Adventure

It ain't over till you reach the exit



With scenery and music based on Mozart's famous opera, this charming turn-based puzzle game takes place in the Kingdom of the Queen of the Night and stars Prince Tamino. Split between two acts, the game comprises 32 spatial puzzles, many of them offering multiple completion methods. The goal in each stage is to guide Tamino safely to the exit by moving floor tiles around; he can only stand on white tiles, not red ones or those with rocks. The basic gameplay is a traditional sliding-tile puzzle. In addition, there are crumbling tiles, ladders and cubes to

move up or down. On some levels, switch between two characters in order to trigger colour-coded switches. Hazards include snakes, patrolling guards and a monkey that chases you. As a challenging puzzler, it hits most of the right notes.

» Price £1.49/\$2.25

» Designed for Phone and tablet

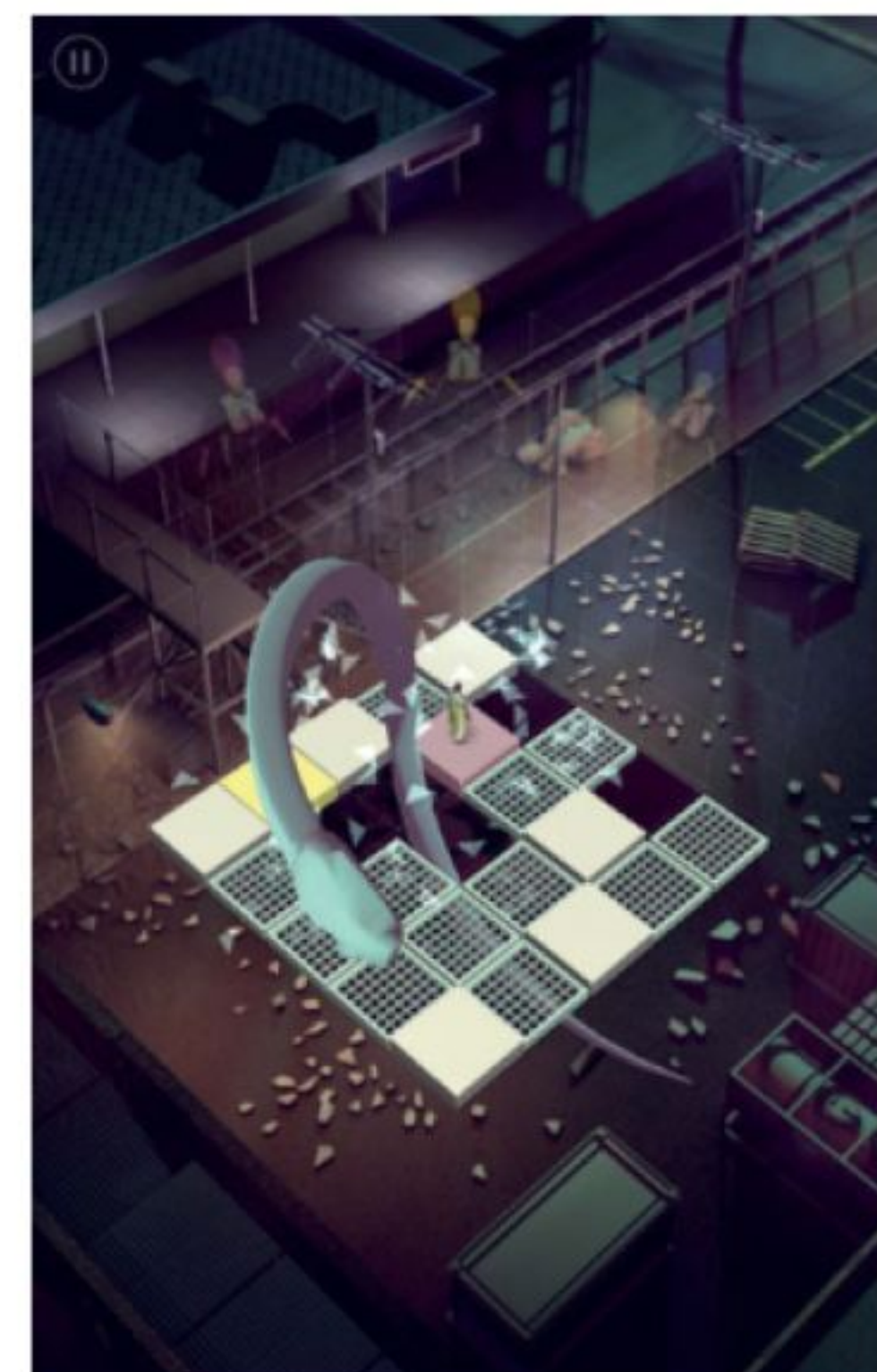
» Requires Android 4.1 and up



» like this? try this!



**SLIDE PUZZLE** » A version of the classic sliding tile game that's played with your own photos



Slide the tiles around and get to a green safety zone before the serpent strikes



# quickhits

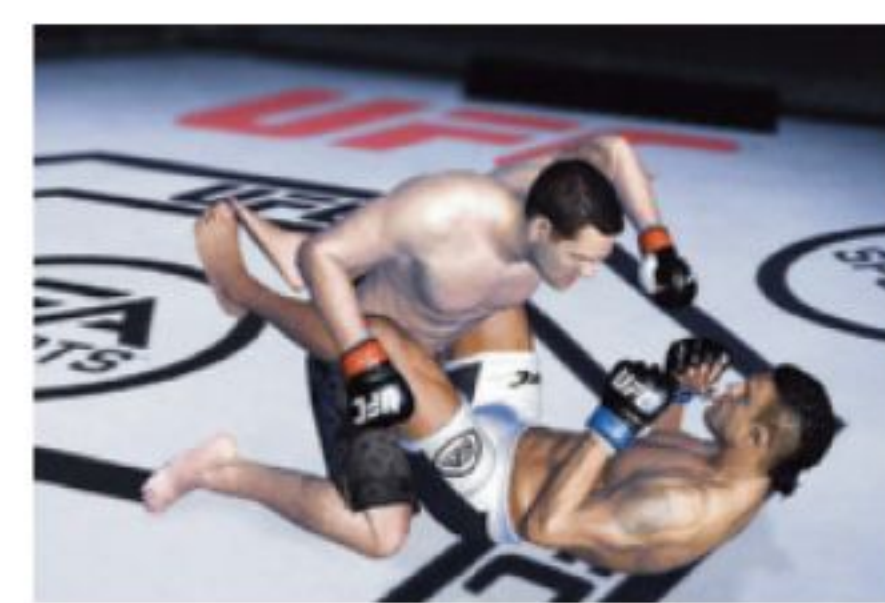
## 5 top games for... fighting fans



### Garou: Mark of the Wolves

£2.99/\$3.99

Best played, like most mobile fighting games, with a Bluetooth controller, SNK's *Fatal Fury* spin-off is great fun and offers surprising tactical depth. And it's got a two-player versus mode!



### EA Sports UFC

Free + IAPs

MMA fans will love this ultra-violent, action-packed fight fest. The gesture-based controls work well enough and the career mode is absorbing. Ironically, the freemium aspect isn't too harsh.



### Marvel Future Fight

Free + IAPs

An open-world fighting game where you assemble a squad from a vast roster of Marvel superheroes? What's not to like? Well, there is the freemium aspect, of course, but IAPs aren't essential to play the game.



### Soulcalibur

£8.57/\$11.99

Yeah, it's a bit pricey for a mobile game, but you are getting the classic Namco coin-op and a bunch of play modes to go with it. The one obvious omission is that there's no two-player versus option.



### The King of Fighters A-2012

Free

A special free app to celebrate the series' 20th anniversary, it delivers plenty of classic beat-'em-up action, although it does lack a couple of fighters (Kyo and Iori) from the paid version.



#### » specification

Price **£2.50/\$4.00**

Designed for Phone and tablet  
Requires Android 4.4 and up

#### » verdict

Performance

Design

Value

It falls a little short of greatness, but is a thought-provoking experience



#### 2 hour wonder

Want your money back?  
You've got 2 hours to decide!



##### » 0-40 minutes

The story and music create a haunting atmosphere



##### » 40-80 minutes

Cloud harvesting is easily the best part of the game



##### » 80-120 minutes

Random encounters can prove frustratingly lethal

**keep** refund

While harvesting cloud water in the glider, you'll often come under attack

#### » like this? try this!



**Gathering Sky** Guide a flock of birds across the sky and through the clouds in this mesmerising musical experience

## Bike Unchained

Does an unchained bike even work properly?



This enjoyable mountain bike game sees you traversing Slopestyle, Downhill and Enduro courses in three locations.

Control is simple, as you don't even need to steer. Just long press to speed up in the right places (shown by green lines) and swipe up or down to increase or decrease air time from ramps. While in midair, a trick stick can be used to perform various stunts and fill an adrenaline bar. Winning races earns you reward packs containing skill badges to improve riders' stats or parts to upgrade bikes in the

workshop, where you can also make any necessary repairs due to falls.

Riders specialise in tricks, speed or endurance, so you'll need one for each of the three main event types – you get given two for free, but need to buy the third with in-game currency. This really comes into play when, after a gentle introduction, the difficulty curve is eventually ramped up, requiring lots more rider XP to succeed. Naturally, currency is available as IAPs as well as from watching ads. At least there's no recharging energy required to race.



Helpful green lines indicate when to pump by long pressing the screen

» Price Free + IAPs  
» Designed for Phone and tablet  
» Requires Android 4.0 and up



#### » like this? try this!



**SHRED! DOWNHILL MOUNTAINBIKING** » Speed downhill through over 30 courses inspired by real-world locations and events



# android magazine™

# BUYER'S GUIDE

Discover the best smartphones, tablets and accessories to buy in our top ten charts



For the most up-to-date reviews, head to [www.littlegreenrobot.co.uk](http://www.littlegreenrobot.co.uk)  
THE LATEST ONLINE INCLUDE... SONY XPERIA Z5 » HONOR 7 » XIAOMI REDMI NOTE 2



## TOP 10 SUPER SMARTPHONES THE BEST FLAGSHIP AND MID-RANGE ANDROID PHONES ON THE MARKET

1		<b>Samsung Galaxy S6</b> Samsung has come out fighting after the humdrum response to the S5, with this stunning handset made entirely of metal and glass. Samsung has had to sacrifice microSD support and a removable battery to make it so thin and light to hold, but it offers a 16MP camera, wireless and superfast charging, an improved fingerprint scanner and a benchmark-beating processor instead.	<b>£479</b>  See issue 52	
2		<b>Nexus 6P</b> Finally, we have a Nexus that is truly a device without compromise – a worthy flagship for Android heading into 2016. The camera is one of the best in the business, while the beautiful screen could truly see the end of your tablet use. Even the 64GB model represents a real bargain.	<b>£449</b>  See issue 58	
3		<b>LG G4</b> The LG G4 is a close second for the phone of the year behind the Galaxy S6 with a distinctive leather-back case and superior camera. Its unique Quantum IPS screen will amaze with bright and crisp images that offer vivid colours, while its 200GB microSD port offers lots of extra storage.	<b>£372</b>  See issue 52	
4		<b>Sony Xperia Z5</b> It's another device that prioritises evolution over revolution, but that's not to say Sony's fifth-generation Xperia handset is a dull affair. The cameras are arguably the best we've ever seen, while it ticks every specification wishlist. It's waterproof and dustproof too, but it does come at a price.	<b>£549</b>  See issue 57	
5		<b>Moto X Style</b> Although it isn't a direct replacement for the second-generation Moto X, the Style is a step up in terms of specifications (bigger battery, more RAM, better screen resolution and a hexa-core processor). The screen really is a sight to behold and the design is cool and edgy. It's superb value for money too.	<b>£399</b>  See issue 57	
6		<b>Huawei Mate S</b> Stunning, in every sense of the word. Huawei's best-ever device could be your next droid. The build quality can't fail to impress, the design is beautiful and the option to go either dual-SIM or to add a storage upgrade via a microSD slot offers an excellent degree of customisation.	<b>£469</b>  See issue 59	<b>NEW ENTRY</b>
7		<b>Sony Xperia Z5 Premium</b> The Z5 Premium is a very good phone, but it's just too expensive and the 4K screen adds little value. Nonetheless it's the first instance of a phone with a 4K screen, so we'll be interested to see whether other manufacturers follow Sony's latest innovation.	<b>£629</b>  See issue 59	<b>NEW ENTRY</b>
8		<b>HTC A9</b> The M9 remains a great device, but the A9 feels like a change in direction for HTC. Taking on board criticisms of its flagship device, HTC has kitted the A9 with bleeding-edge specs and even shipped it with Android Marshmallow. As you'd expect, the build quality is of the highest order.	<b>£449</b>  See issue 58	<b>GOING DOWN</b>
9		<b>HTC One M9</b> We marked the M9 down for only being a very minor update on the M8, but it is undeniably a superb phone. Underneath its elegant silver and gold chrome shell, it houses a superfast Snapdragon 810 processor, 20MP camera, 3GB RAM, 32GB memory and some clever customisation tools.	<b>£579.99</b>  See issue 50	<b>GOING DOWN</b>
10		<b>Moto X (2014)</b> The second-gen Moto X remains a contender for best phone despite only launching last year. It offers a stock Android experience with a 13MP camera, 15-minute Turbo charging, but is much cheaper than the Nexus 6 that has the same features. Its other specs are starting to look a bit dated though.	<b>£219.99</b>  See issue 45	<b>GOING DOWN</b>

In case you missed it... **Top budget phones** Read more in issue 58



**Moto G (2015)**  
 » Price £159/\$179.99  
 » Website [motorola.com](http://motorola.com)

Motorola knows exactly what it's doing with its budget phone range. It's cheap, cheerful and boasts solid specs.



**Wileyfox Swift**  
 » Price £129/\$200  
 » Website [wileyfox.com](http://wileyfox.com)

The Wileyfox Swift ticks a lot of boxes and for a first-time phone, it has got a lot of things right with plenty of unique functions for users to enjoy.



**Vodafone Smart speed 6**  
 » Price £50  
 » Website [vodafone.com](http://vodafone.com)

Don't expect too much from this £50 phone and it just might surprise you. Good on the inside, but it's not so impressive on the outside.



**LG G4c**  
 » Price £169.99  
 » Website [lg.com](http://lg.com)

This is a reliable phone, but it's the most expensive of the four due to brand. It won't let you down, but won't bring much joy either.





# Buyer's Guide

## TOP 10 BUDGET BUYS IF YOU'RE SHOPPING FOR A SMARTPHONE ON A SHOESTRING, CHECK OUT THESE LOW-COST MOBILE MUST-HAVES

1		<b>Vodafone Smart ultra 6</b> Our newly crowned best budget phone in the world marries excellent specs and a smooth user experience to topple the ZTE Blade S6 back into second place. We love this phone's octa-core processor, 1080p screen and 2GB RAM – specs you'd expect to see in a premium handset. Throw in the fact it looks good and the cameras work brilliantly, and you've got a serious bargain.	<b>£115</b>  See issue 56	
2		<b>ZTE Blade S6</b> While its price puts it at the top end of what we would call a budget phone, the Blade S6 is the best ZTE Blade in years. It runs Android Lollipop, has a 64-bit Snapdragon processor, 2GB RAM and the exact same IMX214 camera as the Sony Xperia Z3 – which costs around three times as much!	<b>£149.95</b>  See issue 50	
3		<b>Xiaomi Redmi Note 2</b> If you're willing to import your device then you can save a lot of money – as Xiaomi's Redmi Note 2 proves. For a stunning price you will get an octa-core processor, 2GB RAM and a lovely 5.5-inch, 401 ppi screen. It's an incredible phone, but it is heavily skinned and hard to get hold of.	<b>£115</b>  See issue 57	
4		<b>Wileyfox Swift</b> The Wileyfox Swift is excellent value for money and good fun too. It matches its rivals in the market with a 5-inch HD screen, 2GB RAM and a five-lens camera enclosure, perfect for taking photos in low light. Cyanogen 12.1 proves to be an authentic alternative to stock Android.	<b>£129</b>  See issue 56	
5		<b>Moto G (2015)</b> The newly updated third-gen Moto G (2015) model doesn't offer the same metallic finish as the ZTE Blade S6 or Alcatel OneTouch Idol 3, but you can personalise its design before you buy, like you can the much more expensive Moto X. It is also waterproof, offers 4G and has a dual-flash 13MP camera.	<b>£159</b>  See issue 55	
6		<b>Moto G 4G (2015)</b> Now that the regular Moto G and Moto E have been updated and both offer LTE, this handset doesn't offer much except that it's slightly cheaper than the Moto G (2015). It also looks very similar with a 5-inch screen, booming dual speakers and vanilla Android 5.0.2, but it only offers an 8MP camera.	<b>£139.99</b>  See issue 51	
7		<b>Moto E (2015)</b> The second-gen Moto E is nipping at the heels of the Moto G for the title of Motorola's ultimate no-strings-attached smartphone. It also offers 4G and has Android Lollipop built in, with the added promise of an all-day battery. But its 5MP camera, bulky size and poor display reflect its budget price.	<b>£109</b>  See issue 54	
8		<b>Asus ZenFone 5</b> While it is one of the most expensive phones in our budget buys chart, the ZenFone 5 offers an awful lot for less than most mid-range phones. A stylish metal design is available in a range of colours, it has a sharp 5-inch screen, powerful Intel Atom processor and an 8MP shooter with a range of modes.	<b>£149.99</b>  See issue 48	
9		<b>Honor 4X</b> The biggest and best of the mid-range Honor phones, the 5.5-inch Honor 4X has a lot going for it, including a 13MP camera, off-brand octa-core processor and 4G connectivity. However, you pay for the high specs at a low cost in other areas: it only runs Android 4.4 KitKat and has a mediocre screen.	<b>£148.86</b>  See issue 53	
10		<b>Sony Xperia M2 Aqua</b> Just like Sony's flagship Xperia Z5, this mid-range marvel is waterproof up to at least 1.5 metres. Sony's other top feature is here as well with an 8MP rear camera and a suite of photography tools. The only downside is that after you factor in all the preloaded apps, it only has 4GB of storage.	<b>£150</b>  See issue 48	

## In case you missed it... Travel apps Read more in issue 42



### XE Currency

» Price Free



Discover whether that straw donkey really is a bargain with this currency converter. It

supports every world currency, converts quickly to another and even works offline. It's our go-to app for converting currencies thanks to its ease of use and up-to-date rates.



### Postagram Postcards

» Price Free



Emailing details of your travels to your loved ones is nice, but why not surprise them with a real glossy postcard based on one of your own holiday photos? A postcard has got great retro value and, best of all, there's no need to buy a stamp either.



### Triplt: Trip Planner

» Price Free



Triplt creates a detailed itinerary for your whole holiday or trip, including your flights, hotels and any activities – just forward your travel confirmation emails to it to add the data. Extra premium features are also available.



### Gogobot

» Price Free



Use this app to get other travellers' insider tips on the coolest places to go in more than 60,000 destinations worldwide with this crowdsourced travel guide. You can share your tips and adventures too, so don't forget to mention that little backstreet bar with \$2 margaritas.





## TOP 10 BEST TABLETS

WHETHER YOU'RE LOOKING FOR A SEVEN OR TEN-INCH DISPLAY, THESE ARE THE TOP TABLETS AVAILABLE ON ANDROID

1		<b>Sony Xperia Z4 Tablet</b> Sony's lightest and brightest tablet ever, the Z4 has made us fall back in love with the 10-inch tablet when the Nexus 10 left us cold. With a clip-on keyboard and Microsoft apps bundled in, it is a top tablet for when you want to set up a mobile office. But all work and no play makes for a dull device, so the Z4 also supports PlayStation Remote Play and has a crisp 2K display screen, a Snapdragon 810 processor and 3GB RAM to ensure it can keep up with console-quality frame rates.	£505  See issue 54	
2		<b>Sony Xperia Z3 Tablet Compact</b> If the Xperia Z4 is an iPad killer, the 8-inch Z3 has the iPad mini in its sights. Weighing just 270g, it's slim and stylish like its bigger brother, with 3GB RAM and a Triluminos display to boot. It also integrates with the PS4 so the only real difference between the Z3 Compact and the Z4 is its size and price tag.	£269  See issue 46	
3		<b>Google Nexus 9</b> A mighty Nvidia Tegra K1 processor and 2GB RAM mean that even running the most graphic-heavy games won't slow this 64-bit tablet down. The built-in BoomSound speakers also offer great sound quality, making Google's new tablet an all-round media consumption device.	£299  See issue 45	
4		<b>Samsung Galaxy Tab S 10.5</b> Ultra thin and ultra bright, colours look vibrant and details distinct on this powerful Super AMOLED screen. Samsung's iPad slayer also puts many other Android tablets to shame with a multiwindow mode to display several apps at once and octa-core processor ensuring lightning-fast performance.	£349  See issue 43	
5		<b>Sony Xperia Z2 Tablet</b> Arguably one of the most portable 10-inch tablets available, the Xperia Z2 Tablet is waterproof and can support a SIM card for 4G use. It is also surprisingly thin and light to carry, and includes power-saving modes to ensure longer battery life. Reasonably high-spec, it has a whopping 3GB RAM.	£309.95  See issue 39	
6		<b>Tesco Hudl 2</b> This sequel to the supermarket chain's own-brand tablet can't compete with premium models, but sets a new benchmark for budget tablets. Upping the display size from 7 to 8.3-inches, the Hudl 2 also runs Android 4.4.2 KitKat and can handle anything you throw at it thanks to an Intel Atom processor.	£99  See issue 44	
7		<b>Samsung Galaxy TabPRO (8.4, Wi-Fi)</b> The smallest tablet in Samsung's collection, the TabPRO 8.4 proves that good things do come in small packages. A stunning 359ppi screen puts the Nexus 7 to shame, though we'd prefer higher-quality speakers. However, an 8MP camera and an intuitive interface are good compensation.	£199  See issue 38	
8		<b>Vodafone Tab Prime 6</b> Vodafone's 4G tablet is the network's best own-brand device yet, shipping with Android Lollipop built in, a Snapdragon 410 processor and 32GB microSD. Obviously it also requires a Vodafone contract so we recommend buying it outright for £150 and getting the pay as you go deal with 6GB data.	£70  See issue 53	
9		<b>Amazon Fire</b> A solid effort from Amazon who have priced it correctly for new and seasoned Android users alike. The £50 price means that this will be the go-to Android tablet for many new users, although that low price point is reflected in its build quality and design.	£50  See issue 59	NEW ENTRY
10		<b>Archos 101 Oxygen</b> This wedge-shaped tablet is seemingly tilted to give you a better angle for watching videos, plus a mini-HDMI port to connect it to your TV. But we're not sure why as it has a spacious 10-inch screen of its own with full HD display and good viewing angles. Speedy ARM Cortex A17 CPU is a bonus though.	£169.99  See issue 38	GOING DOWN

## NEVER MISS AN ISSUE OF ANDROID MAGAZINE

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# DroidSupport

» troubleshooting advice » hints and tips

## » email an expert

Got an Android-related problem that you need solving? Let us know!

qa@littlegreenrobot.co.uk

## Share your tips & tricks

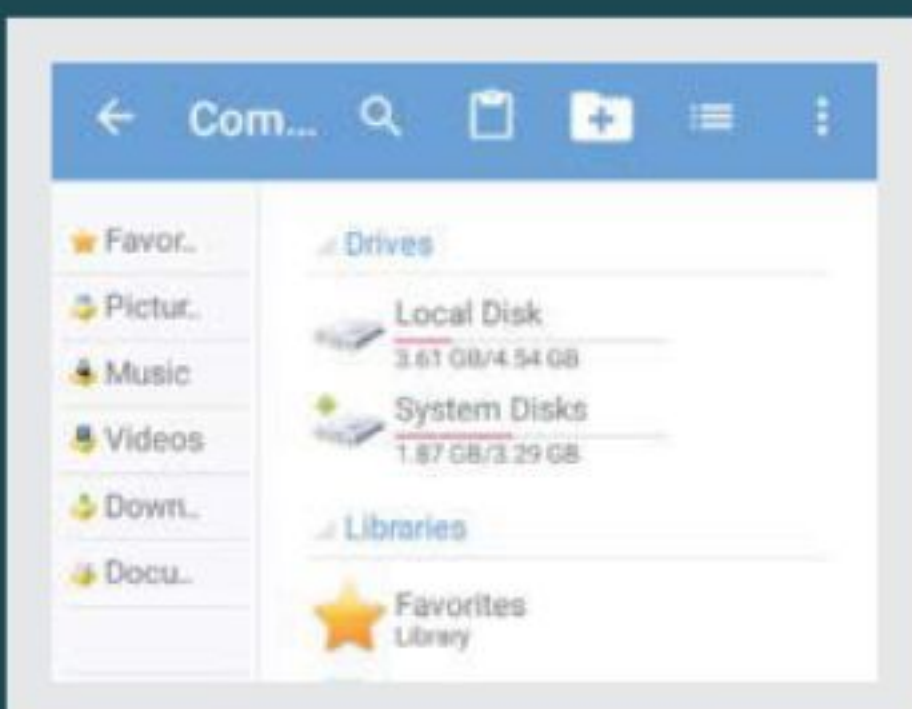
Join us on Facebook and Twitter to share and receive some great tips and advice

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Like us on Facebook and join in our Android community

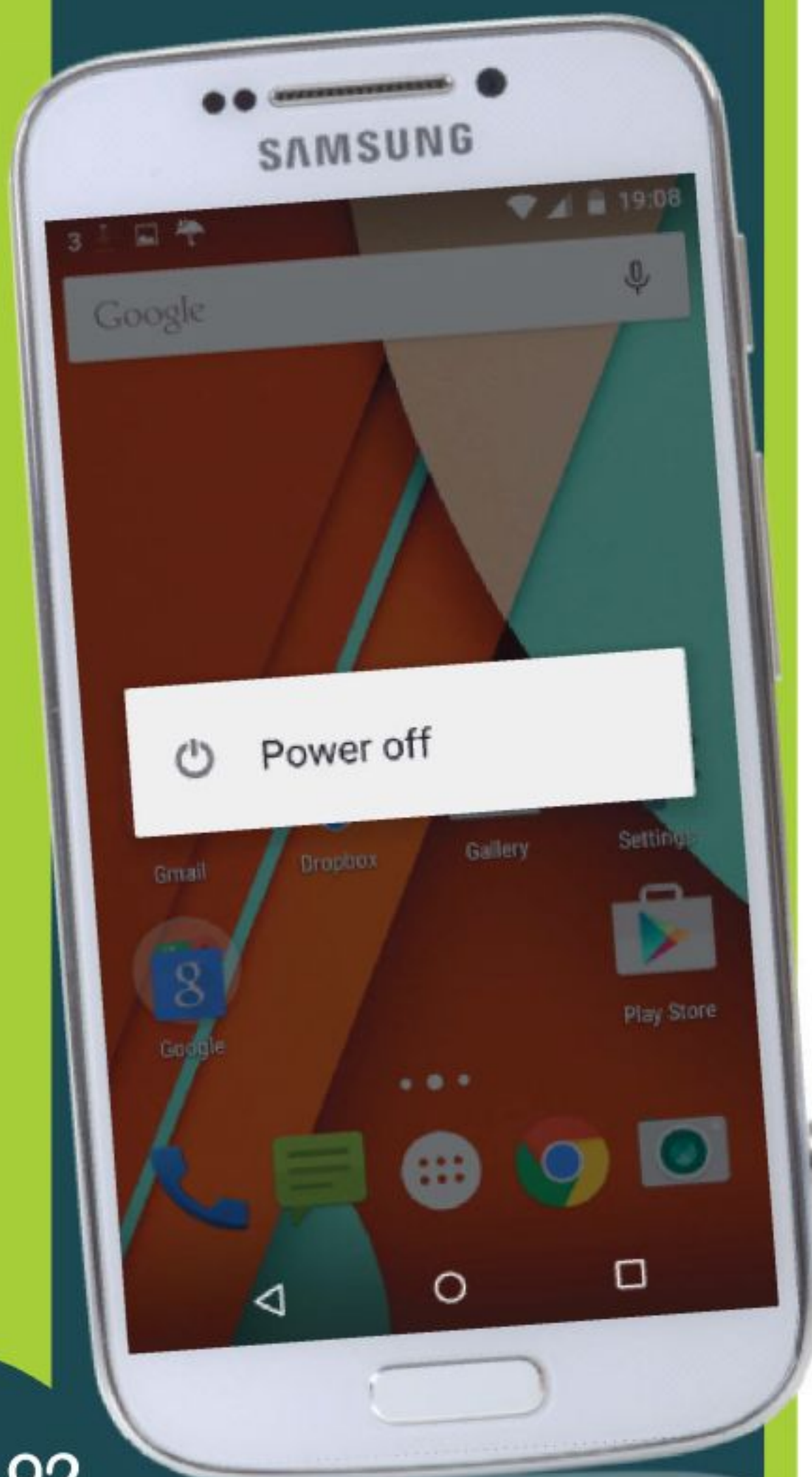
## » twitter

@lgrobot  
Follow us on Twitter to send your thoughts and questions



## Did you know?

If you want to see all of the files on both your Android and computer, and manage them in the most efficient way possible, try Computer File Explorer, available from Google Play. It connects very quickly every time and offers a familiar interface.



# Why is my phone overheating?

“I recently updated my phone to Lollipop and I am convinced that it is overheating. Nothing else seems to be going wrong and the battery life is holding up (most of the time), so I am wondering if there is a hardware fault. How can I test it?” *Laura Ellinson*

**A** **Hi Laura.** Phones often overheat to a point where you can actually feel the heat. At times this can be quite pronounced, but it does not necessarily mean that there is a hardware fault. There is, however, a checklist of things that you can do to see what is causing the excessive heat. Usually it would be accompanied by lesser battery life, but if you are 100 per cent sure that this is not happening we will leave that alone for the moment. The best thing to do first is to run your phone in Safe Mode, as this will stop third-party apps running. Hold down the power button until the standard pop-up window appears and then hold down the Power Off prompt, at which point you should be asked if you want to boot into Safe Mode. When complete, your usage will be limited, but you will be able to see if the phone overheats. If it doesn't, you can be fairly sure that a third-party app is causing the problem and you will then need to do some investigation to find that troublesome download. Other things to consider include not

You can enter Safe Mode to check for rogue power-hungry apps

using a case because this could potentially be causing physical heat to not escape as it should and avoid playing power-hungry games for too long. If we are

honest, we are guessing that your phone will not overheat in Safe Mode and that a recently installed third-party app is causing the problem.

The battery statistics usually offer an indication of why an Android device is overheating





**Ask your questions**  
Got a problem with your Android phone or tablet?  
Send it to us and we'll find the solution

**» facebook**  
 /littlegreenrobot  
Get help from our  
Facebook community

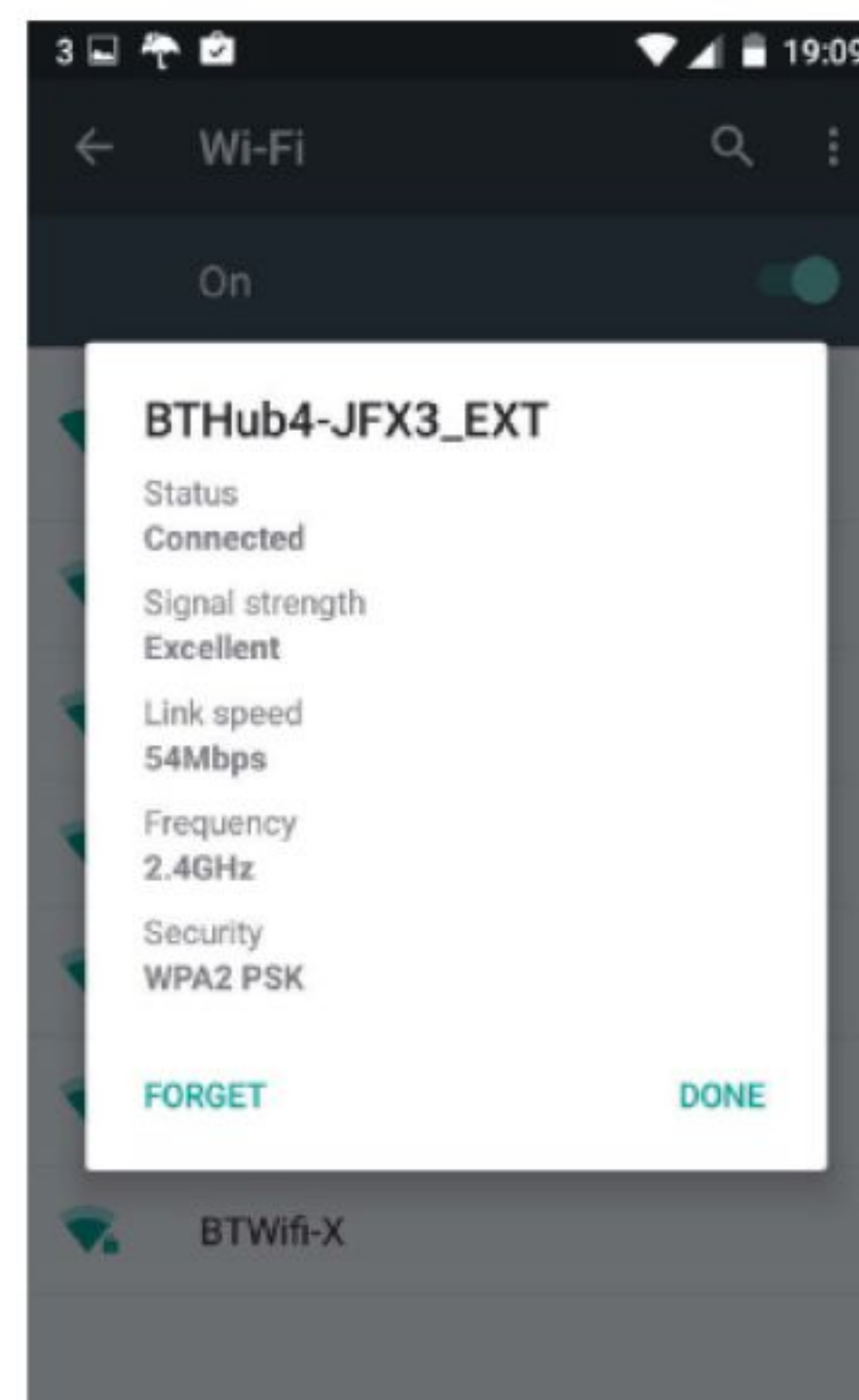
**» email**  
qa@littlegreenrobot.co.uk  
Send your questions for our team of  
experts to tackle

# Why can't my phone connect to all routers?

"Everything works great on my phone apart from Wi-Fi, which is flaky at best. It connects to some routers all the time, but at home it drops often and has to continually reconnect. Any ideas what causes this?"  
*Jerry Bilner*

**A Hi Jerry.** Wi-Fi connectivity issues have plagued Android for a long time, but it would be fair to say that in recent years the vast majority of problems have been fixed to the point that almost every user will never have an issue. There is one simple change you can make to solve most problems though. Go to Settings>Wireless>Advanced and then select the option to Stay connected. This will ensure that your device does all it can to stay connected to the nearest router, but if you continue to see problems then there are other

things you can try. A short-term fix is to Forget the network in the settings, which should clear any software issues getting in the way, but a more permanent solution would be to look for a quality of service setting within your router admin screen. This QoS setting is designed to prioritise certain devices over others and could explain why you are struggling with a particular router. The setting is very useful, but for those who use their phones a lot on Wi-Fi, turning it off could improve performance greatly. A final point is to check the date and



Ironically, forgetting a router can help your device remember it

time are correct on your phone. Strangely, a device that displays an incorrect time or date can have connection problems because it's not lined up with the router's date and time.

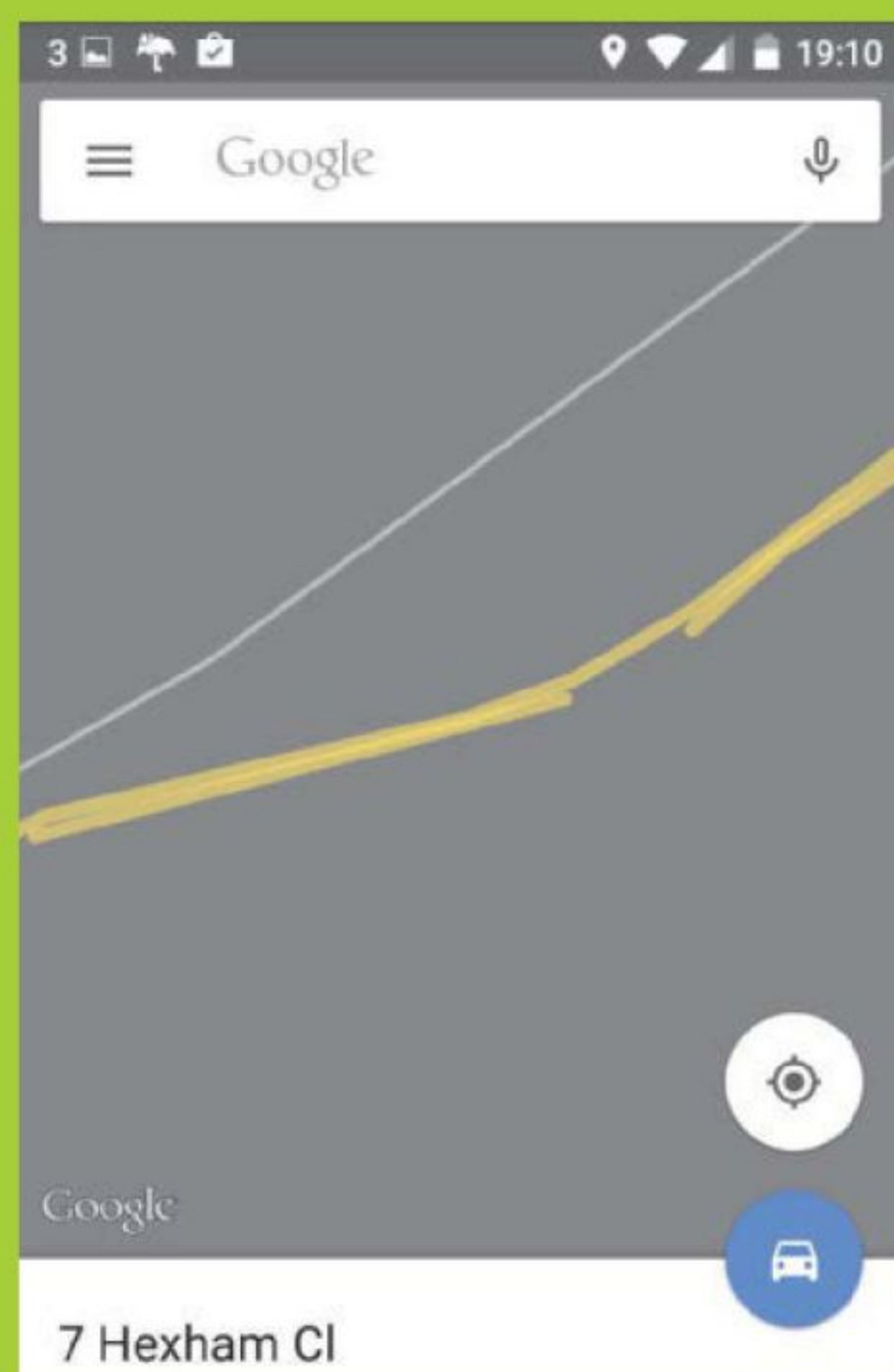


A simple setting change can solve all of your Wi-Fi woes

## hints & tips Get more from your Android device with our handy hints

### What are blank map tiles?

**1** When scrolling through Google Maps and in particular when using the satellite view, don't be surprised to see blank areas pop up momentarily. This is normal and just means that the connection is retrieving the full map.



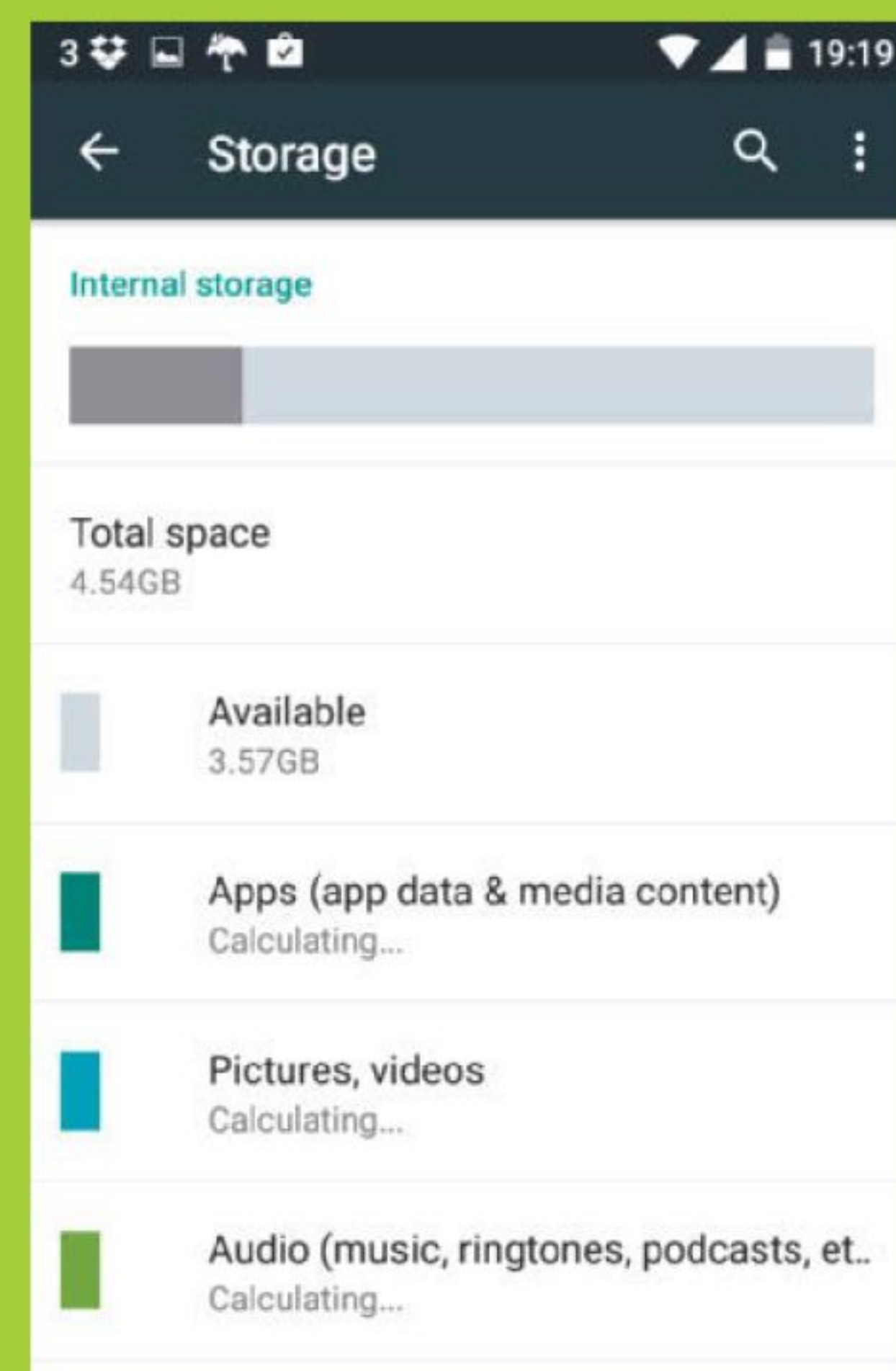
### Deal with dead pixels

**2** If you suspect that your screen has a dead pixel, try downloading Dead Pixel Detect and Fix from Google Play. It will detect dead pixels and then try to wake them so they appear normal. It will not always work, but it's worth a try.



### Is 8GB enough?

**3** When buying a new Android, try not to save money by choosing the lowest internal memory option. Despite the fact that most data can now be stored online, a low amount of memory will age the device quickly.





## Where did the Silent mode go?

The Silent mode option seems to have disappeared from my phone since updating to Lollipop. Has my updated software got a problem or has Google actually removed the option? It seems hard to believe that Google would remove it.

**Lenny Harvey**

**A** **Oh Lenny.** As if Google would actually remove the Silent mode! Oh sorry, yes it is missing in Lollipop, it really is, but we have some answers for you that will help. Go to the Sounds and Notifications settings and make sure that the vibrating mode is not selected. Now select Silent or

None from the list of ringtones and then turn down the volume for both notifications and system sounds. This is not a time-consuming fix, but it is unnecessarily fiddly, so we would advise you to download an app called True Silent Mode for Lollipop from the Google Play store, which is a much more elegant solution. There are many other apps that can give you an easy-to-access silent mode and the good news is that Marshmallow will bring back the Silent mode natively.

## How do I sell my phone safely?

I am planning to upgrade my phone and want to sell it so that I can recoup some of the costs, but I recently heard about a bug in the factory reset mechanism that can leave my data retrievable to others. Is it even worth selling if this bug causes problems?

**Michelle Clarke**

**A** **Hi Michelle.** You can safely sell your phone, but we would advise you follow a procedure first to ensure that your personal information cannot be accessed. The problem is that the flash memory can include blocks that should be overwritten, but which have not been. This in turn can let someone with the right tools access what is on there and so we would advise you to encrypt all of your data in Settings>Security>Encrypt phone. The process will take a little time, but it is well worth it if the device will end up in the hands of someone you do not know well. Once the encryption is complete, you can then perform a factory reset and it will now be ready to sell. Indeed for anyone selling an Android device, going through the encryption process makes perfect sense even if just for the peace of mind it offers. The



It is easy to keep your data safe when selling an Android device

level of encryption that Android offers means that even those who are extremely knowledgeable and who have very advanced tools will likely never see your data. In other words, it will be useless to them.

## “Marshmallow will bring back Silent mode”

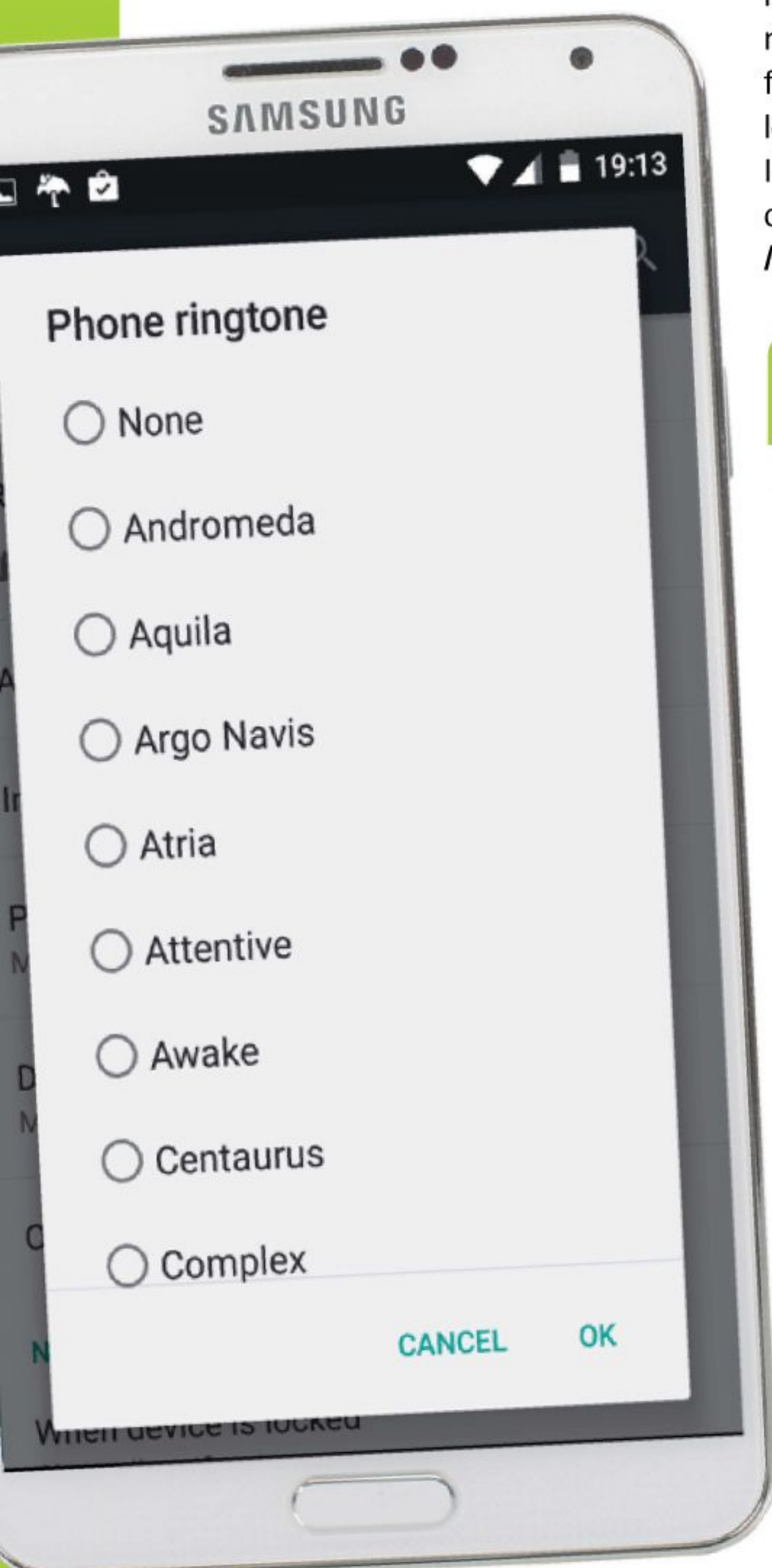
## My SD card is useless!

**A** All of a sudden, my Galaxy Note cannot read the expansion card, which has a lot of personal information on it. Unfortunately, I have not backed it up for a long time and am concerned that it is broken forever. Is there anything I can do to get my data back and to check to see if the card is actually broken?

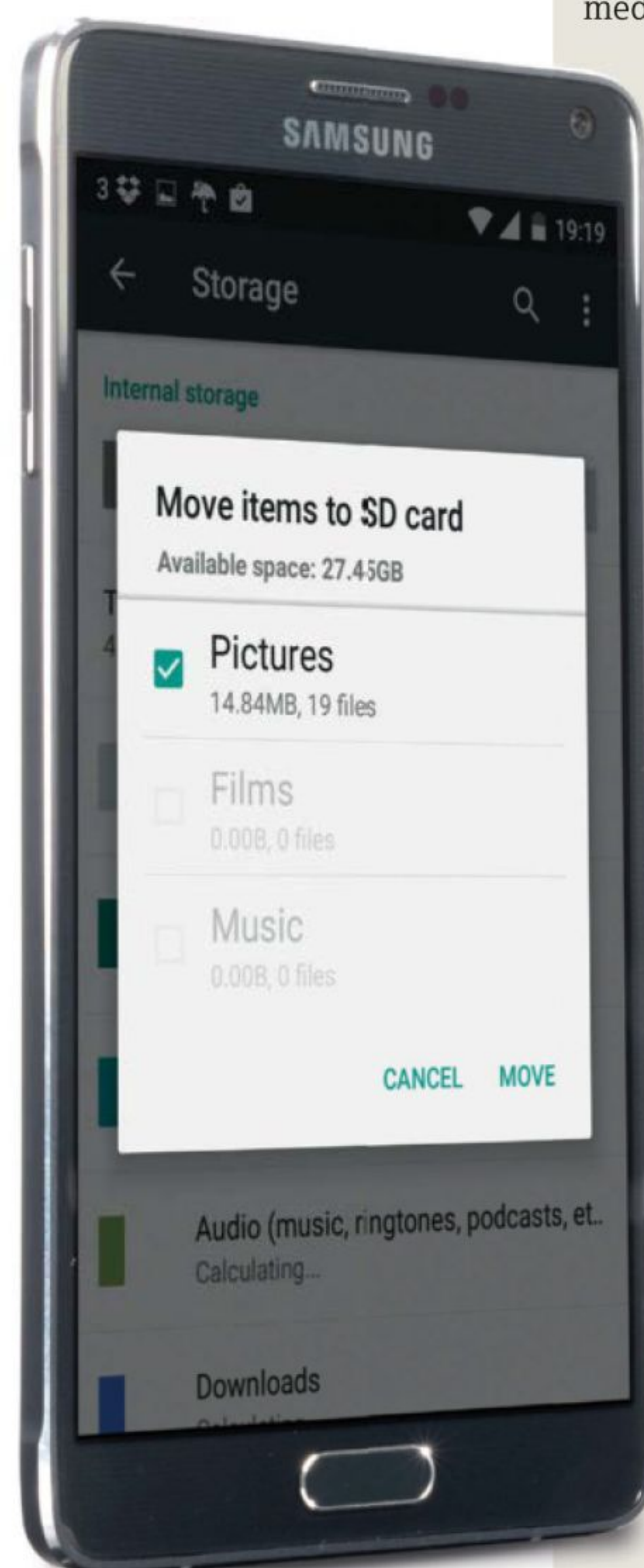
**Bobby Cacher**

**Hi Bobby.** As with all fixed media, problems will occur from time to time and so you will need to follow a process to see if the card is actually broken and then try to retrieve your data. Often there is not a physical problem, but rather an issue within Android and we have a solution for this as well that is included in the following step-by-step guide. You mentioned the biggest problem here, which is not keeping a backup of the data. Many people assume that expansion cards are perfectly safe because they do not contain moving parts, but this is not true at all and it has been evinced by many expansion card failures on all types of devices, from phones to cameras to portable games consoles. Hopefully we can help you to get over this problem, but for everyone else, please back up your expansion cards as often as possible!

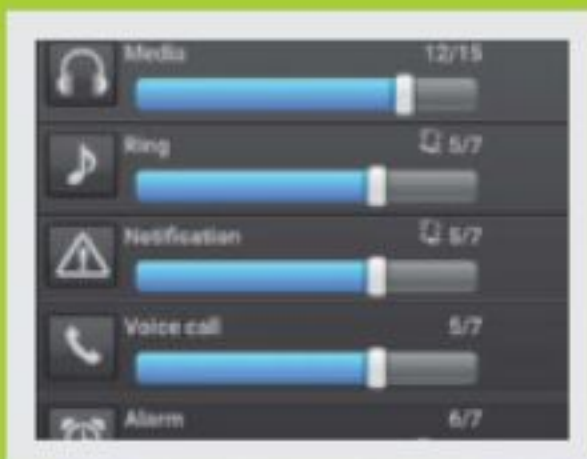
The lack of moving parts generally makes expansion cards reliable, but not foolproof



There is a workaround to the lost Silent mode

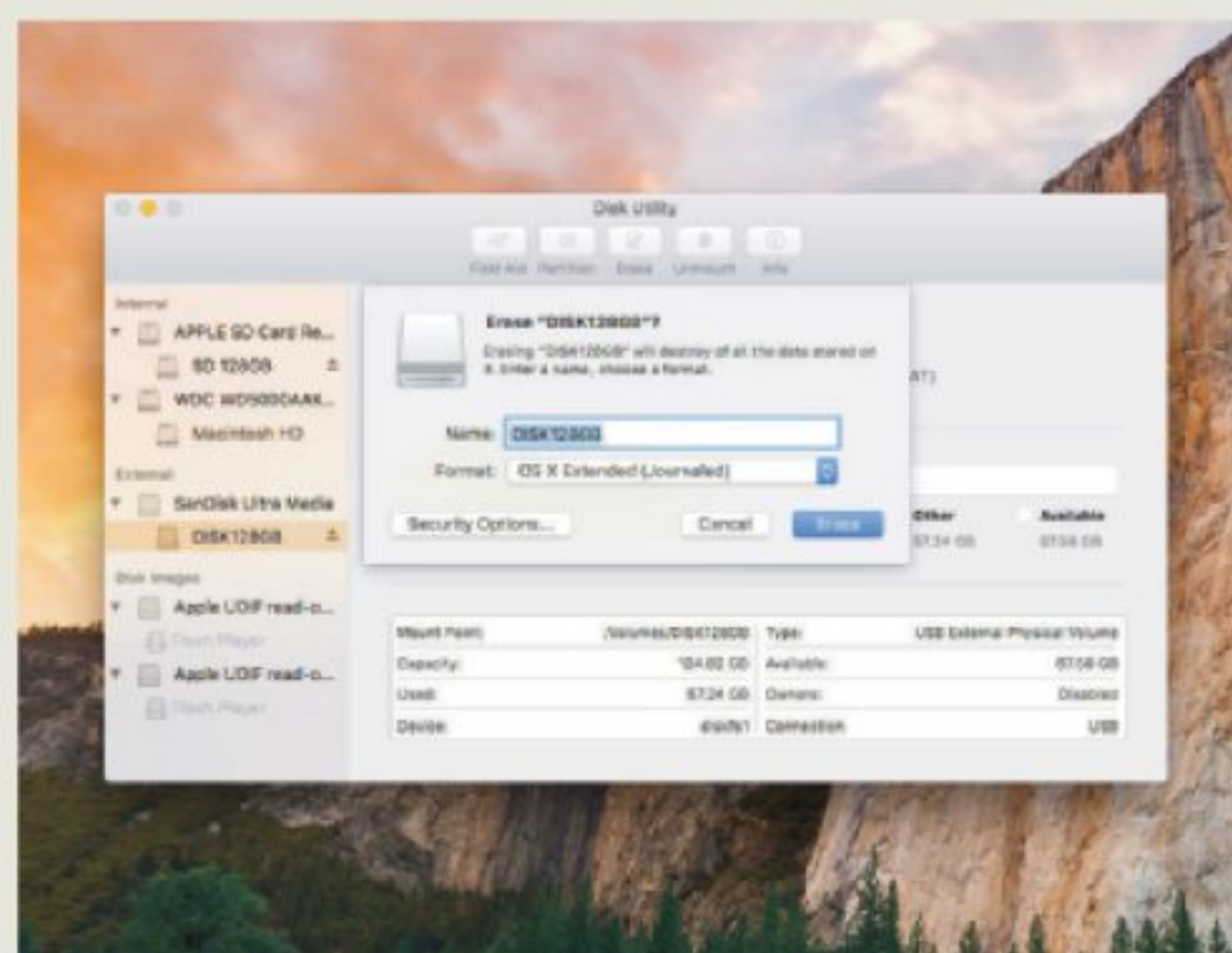
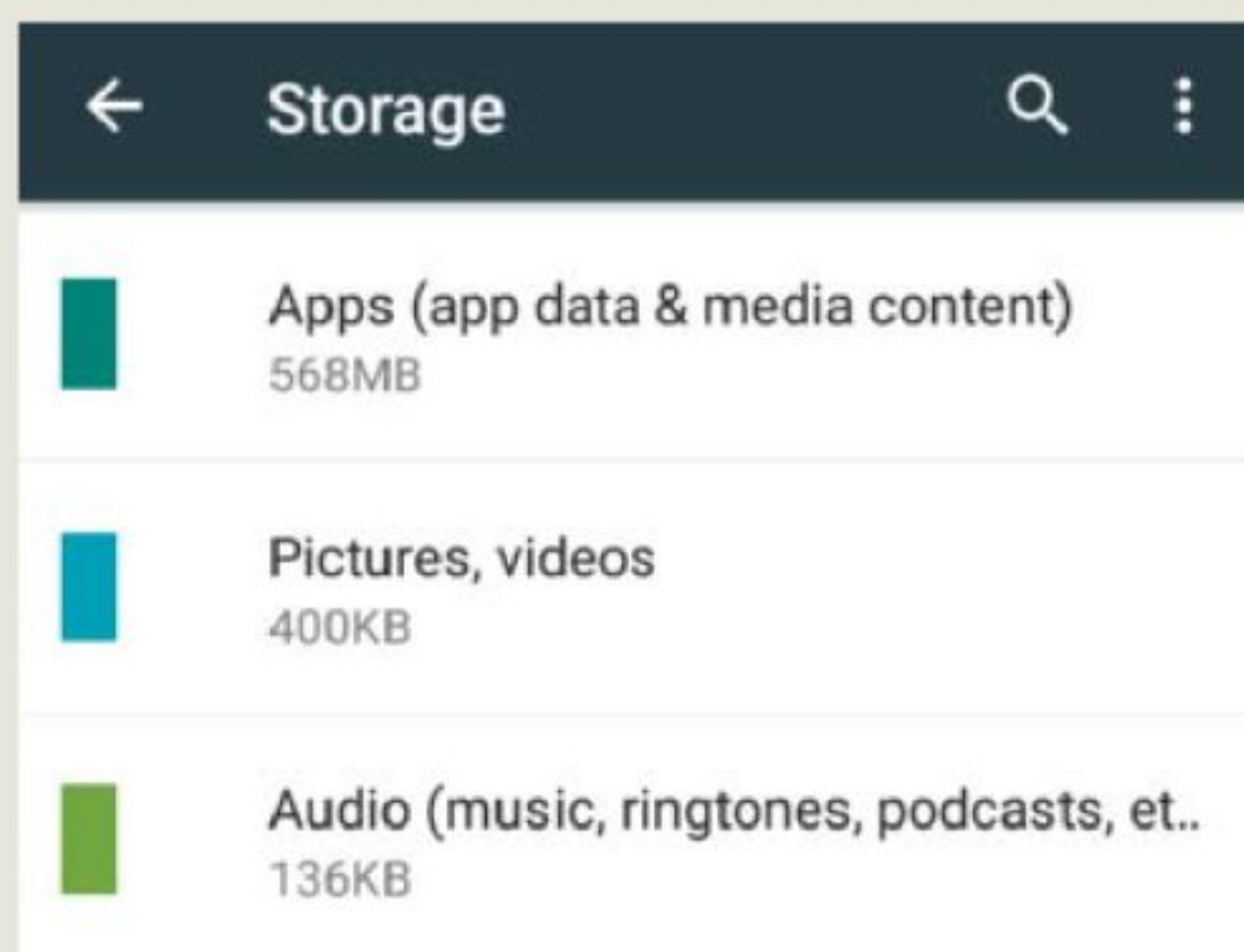






## Did you know?

If the volume keys on your device have stopped working, take a look at Volume Control + on Google Play. It will let you control the volume in a variety of ways using just the screen, until you can find a permanent fix. You may even prefer it to the keys!

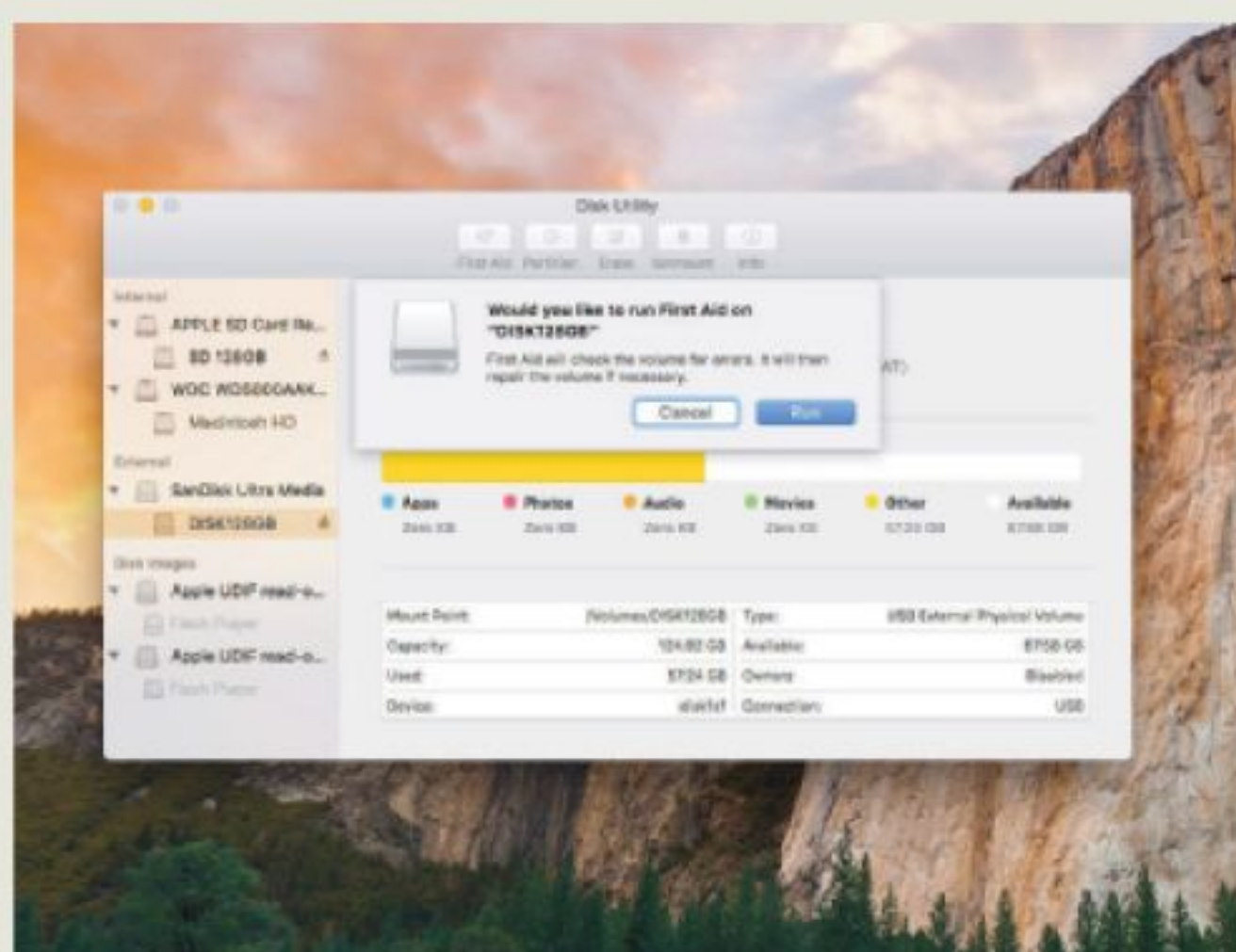


### 1 Where did it go?

If your SD card is not listed in Settings > Storage then this may signal a hardware problem. We would always recommend that you remove the card and blow on it to check for dust on the connections, but if this does not work, some other options are available to you. There is always hope.

### 2 Check it elsewhere

Try using the SD card on a computer, either directly or via an adapter, to see if it is recognised. It's surprising how often a different device can see a card that has failed to work on a device it has been used on for a long time. What's more, you can format it, if the data is not important.

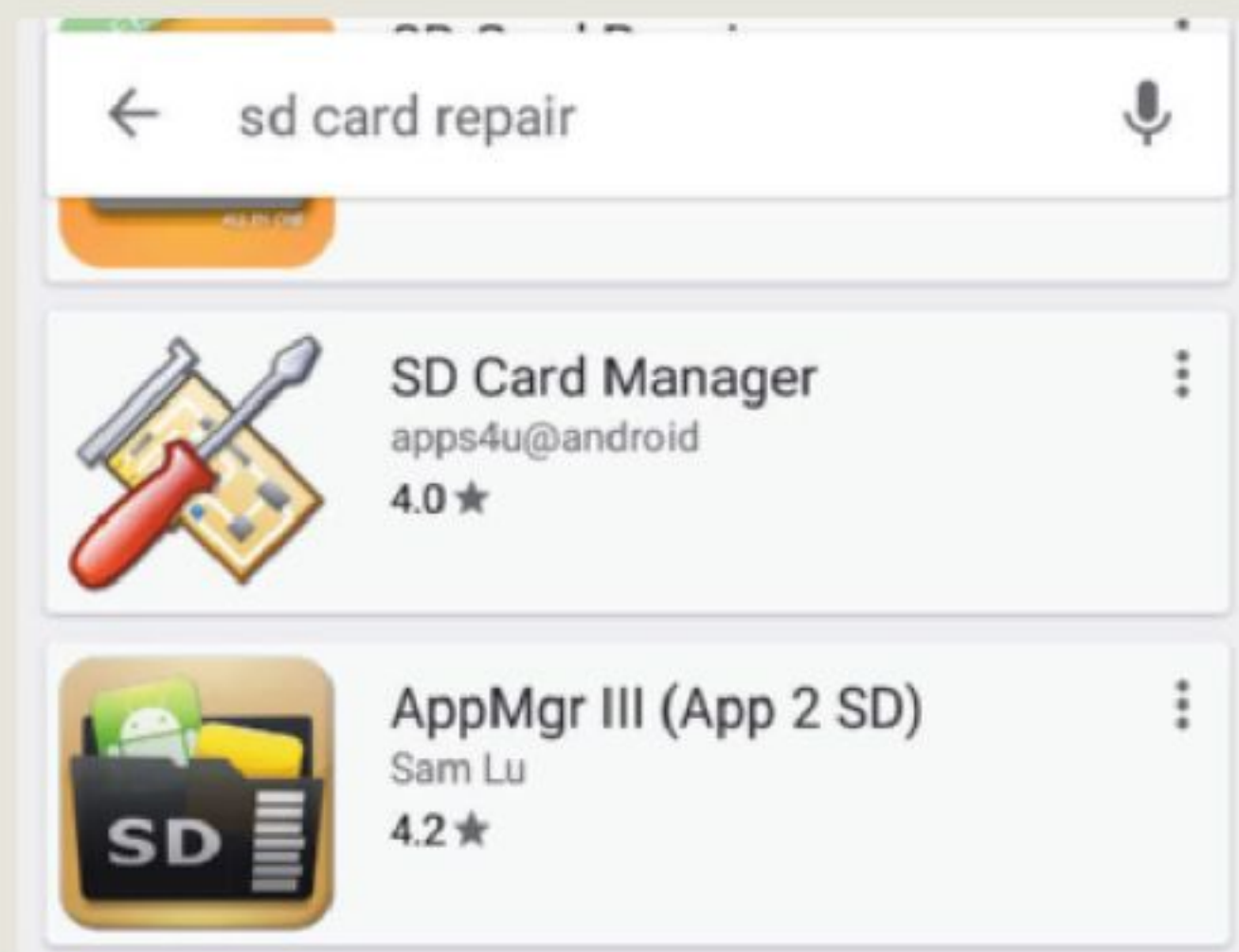
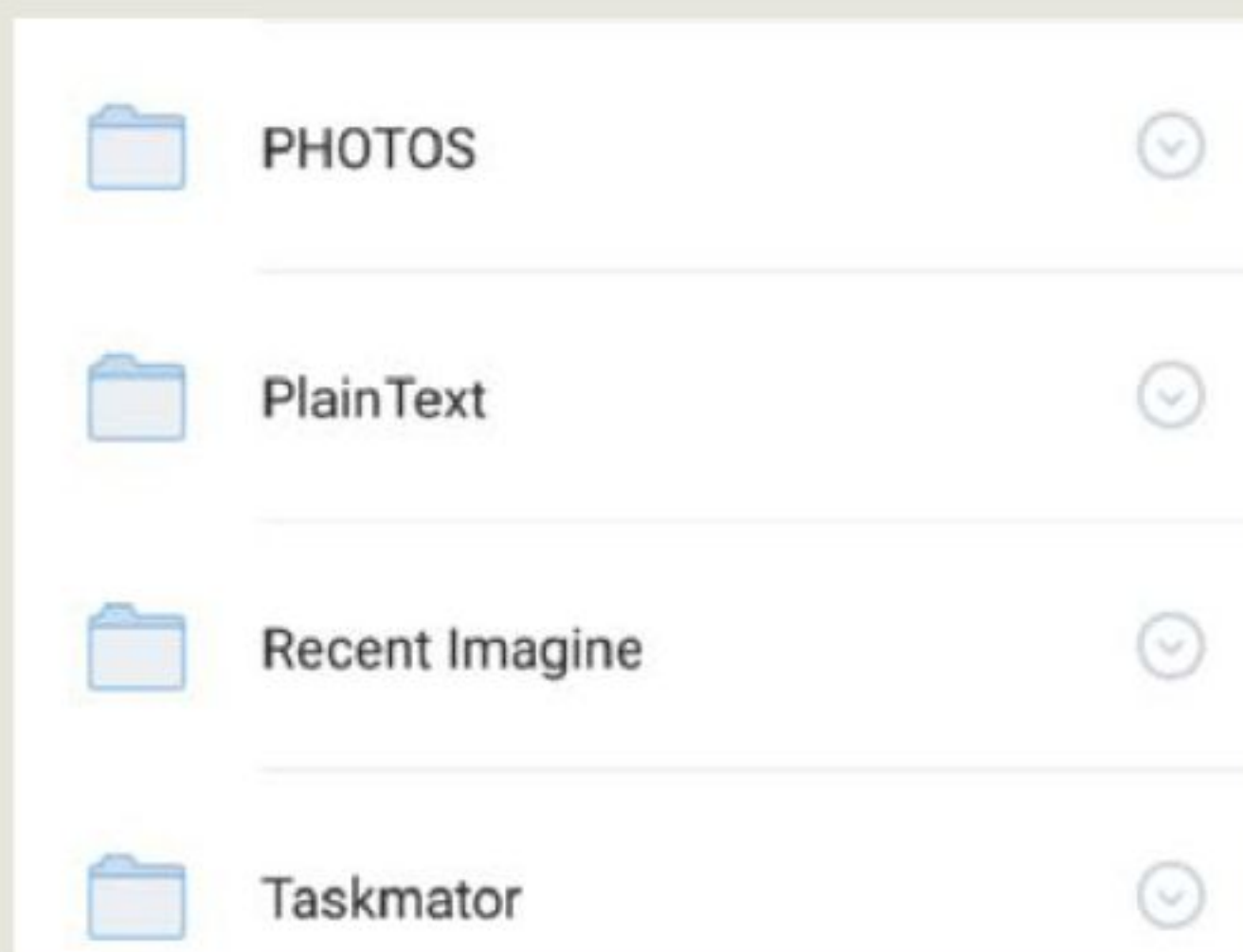


### 3 Try some first aid

Most computers will offer a disk utility of some kind that can be used to check for errors and to repair them if they are playing up. It is always worth trying this if the statistics for your expansion card do not match up with what you expect to see.

### 4 Erase on Android

Whether you are having problems with your SD card or not, it's a good idea to format the card on your Android device. This means that it will be set up to work in the appropriate way for the device you are using and this should minimise the chance of errors occurring.



### 5 Back up your data!

No matter what solution you use, please back up your expansion card. This could mean manually copying the contents to a computer or using a cloud service such as Dropbox. Whatever you do, make regular backups of your important data no matter what it is stored on.

### 6 Some repairs are too easy

Be wary of apps that offer you the chance to repair your expansion card. Our advice would be to try to repair or recover on a computer and to format the card on the Android device. These simple steps offer the best chance of a reliable and quick experience over long periods of time.

# android magazine

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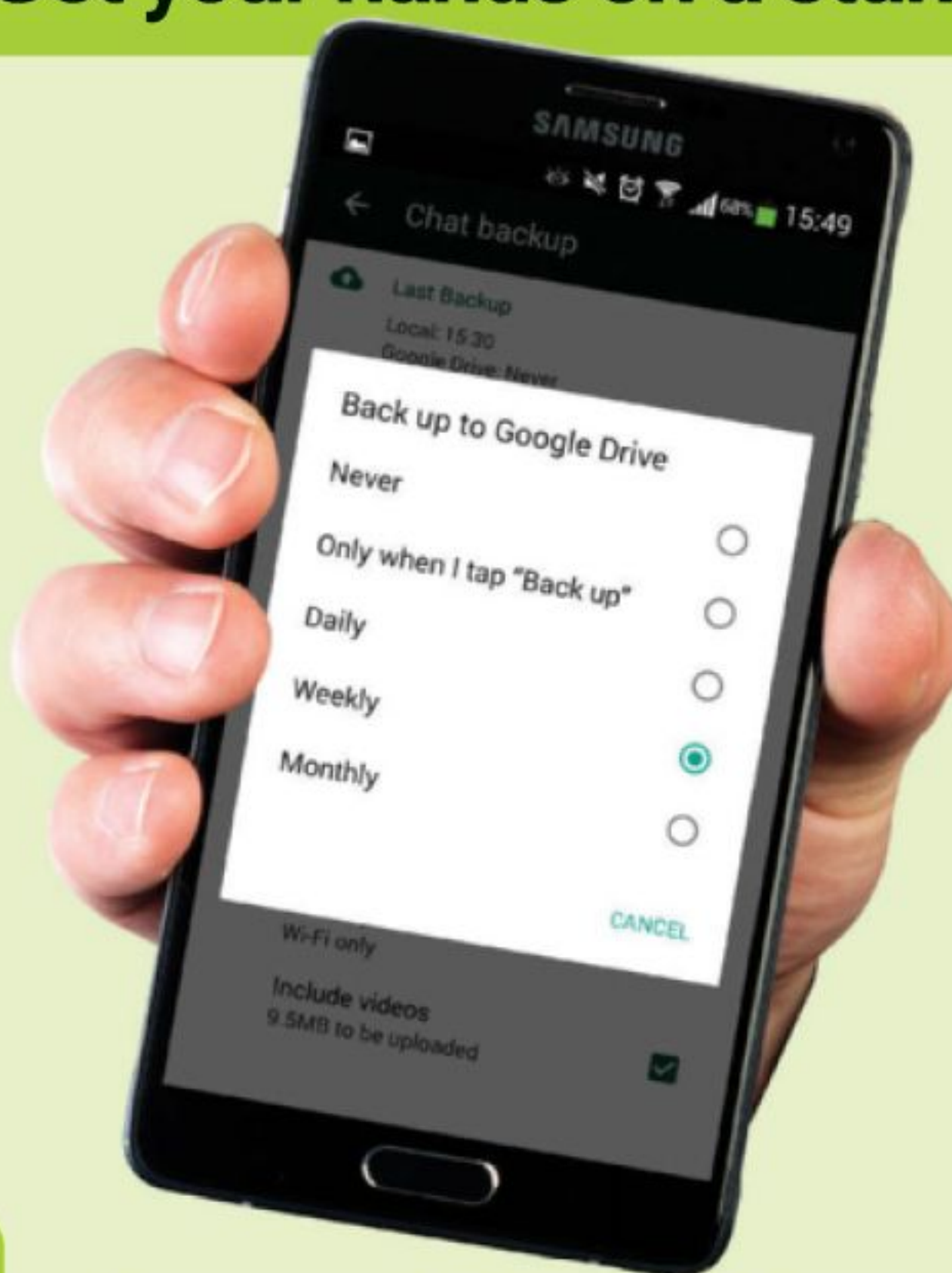


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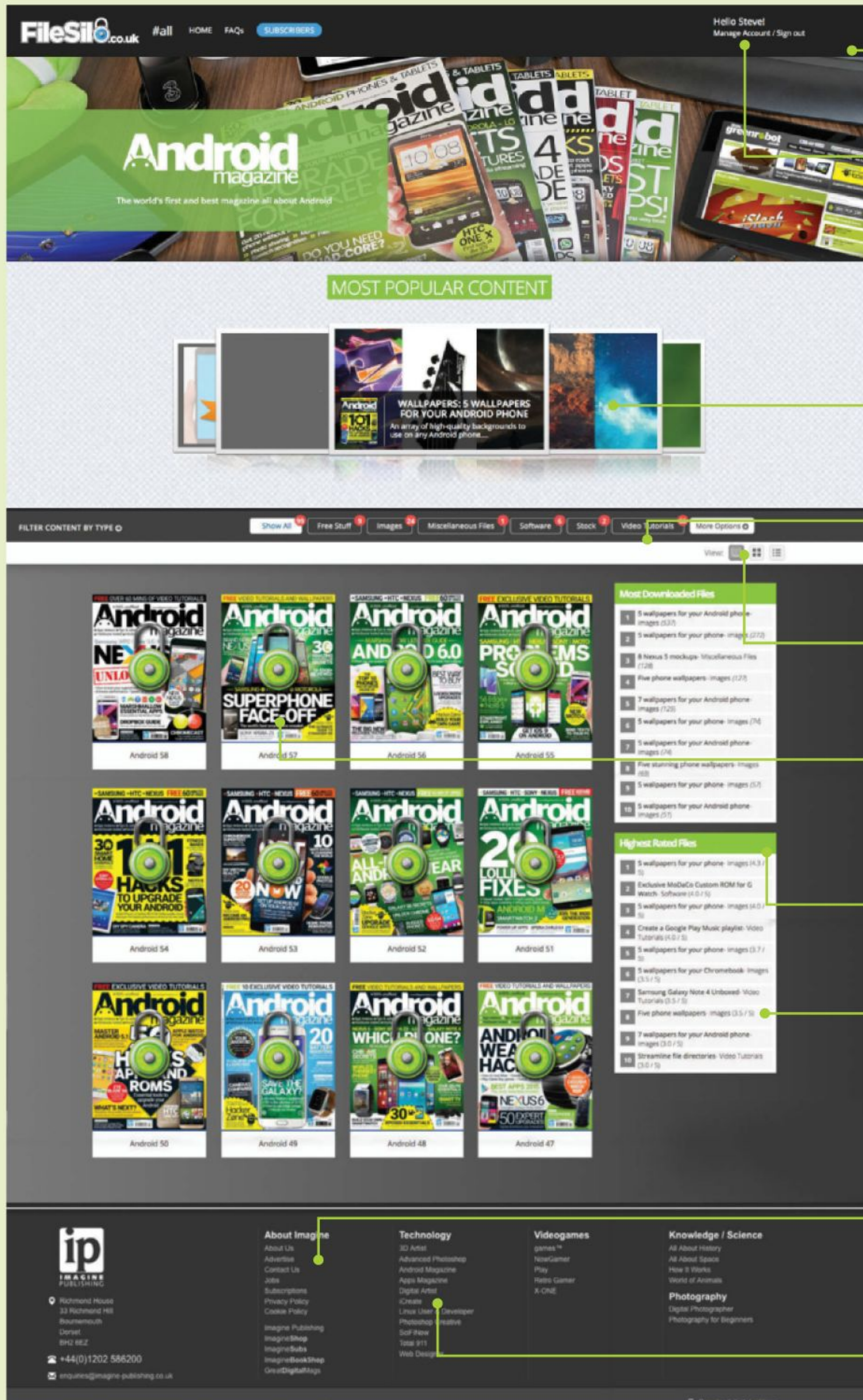
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